

SEQUENCE LISTING

<110> Bhatia, Ajay
Probst, Peter

<120> COMPOUNDS AND METHODS FOR TREATMENT
AND DIAGNOSIS OF CHLAMYDIAL INFECTION

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<141> 2001-12-05

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<212> DNA

<213> Chlamydia trachomatis

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<213> Chlamydia trachomatis

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<213> Chlamydia trachomatis

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<211> 2129

<212> DNA

<213> Chlamydia trachomatis

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<213> Chlamydia trachomatis

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<213> Chlamydia trachomatis

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<211> 763
<212> DNA
<213> Chlamydia trachomatis

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<212> DNA
<213> Chlamydia trachomatis

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665

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<210> 10
 <211> 843
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 <211> 1474
 <212> DNA
 <213> Chlamydia trachomatis

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<210> 12
 <211> 2017
 <212> DNA
 <213> Chlamydia trachomatis

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<210> 13
 <211> 1171
 <212> DNA
 <213> Chlamydia trachomatis

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 tattcctatc gttggtccga gtgggtcagc tgcttccgca ggaagtgcgg caggagcggt 180
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<210> 14
<211> 877
<212> DNA
<213> Chlamydia trachomatis
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<210> 15
<211> 396
<212> DNA
<213> Chlamydia trachomatis serovar E
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<210> 16
<211> 516
<212> DNA
<213> Chlamydia trachomatis serovar E
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 aagttcctca atgtattcat gtacaacaag gaagccttga gttgctaaat ggagctacat 420
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 aactgaagat tttagattca ggaactcctg tacaag 516

<210> 17
 <211> 723
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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 ttaaaaactg taaagggaaa gtttctttca cagataacgt agcctcctgt ggaggcggag 660
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 aca 723

<210> 18
 <211> 1377
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 19

<211> 1736

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 19

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<210> 20

<211> 1135

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 20

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<210> 21

<211> 731

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 21

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<210> 22

<211> 1181

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 22

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<210> 23
 <211> 167
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 24
 <211> 1265
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 25
 <211> 463
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 26
 <211> 636
 <212> DNA

<213> Chlamydia trachomatis serovar E

<400> 26

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<210> 27

<211> 1797

<212> DNA

<213> Chlamydia trachomatis serE

<400> 27

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<210> 28

<211> 1983

<212> DNA

<213> Chlamydia trachomatis serE

40007693.123304

<400> 28

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<210> 29

<211> 1224

<212> DNA

<213> Chlamydia trachomatis serE

<400> 29

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ttgcatcact tggtttatga agtggtggat aacagtatcg atgaggcaat ggcggttttt 1200
tgtaccgagg tcgttggtcg cata 1224

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<210> 30
 <211> 883
 <212> DNA
 <213> Chlamydia trachomatis serE

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<210> 31
 <211> 393
 <212> DNA
 <213> Chlamydia trachomatis serE

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<210> 32
 <211> 2577
 <212> DNA
 <213> Chlamydia trachomatis serE

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<210> 33
 <211> 554
 <212> DNA
 <213> Chlamydia trachomatis serE

<400> 33
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 tttttttaaa ttaagtgtac ttccagctct tctcggactc tggctatttt ttactcctaa 180
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<210> 34
 <211> 1433
 <212> DNA

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<210> 37
 <211> 2093
 <212> DNA
 <213> Chlamydia trachomatis

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10007693-120501

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<210> 38
<211> 1834
<212> DNA
<213> Chlamydia trachomatis
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<210> 39
<211> 1180
<212> DNA
<213> Chlamydia trachomatis
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attatttttg ttaaaaagaaa tacttaatga gttttattta attaacgaaa cgaaaagctt 180
gctaatagaaa attatttcaca cagctatcga atttgctccg gtaatcaaaq ccggaagcct 240
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 aaaattatct tatttttttg ctggagagca agaagcaact gctttctcct acttttatga 420
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 tgcactagaa aacgccttaca cgctcattat tatagggtacc 1180

<210> 40
 <211> 1297
 <212> DNA
 <213> Chlamydia trachomatis

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 cattaacatc agggcagagg gcaagtgcgc gagcattatc ggctttcaca gatcctccgt 180
 aaagaatggg ggtgcgttcc gcaatatctt tggaaaagag agaagcaatc gtttttctac 240
 agaaagcatg ggtttcctga actagatcag gatgagctac ttttcgggtg cctatagccc 300
 agactgggtc ataagctaga atgaaagagg cttgctcagg gagtttagat aatcctatag 360
 tcagttgatt taaaagaata tcttgagttg ctccagattc ttgttcttct aaagtttctc 420
 caatacacag aactggaatc attccactat ggatagctgc agcagctttt tcagcaagta 480
 caggattttg ttcattgaaag atattgaatg tttcggaatg tccgatgaga acaaaatcga 540
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 aaaatttgtg gtattacgca tctgatgat gctcgggaag ctgccaaagc gggagccgat 1140
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 tatatcgtag aggtatata ggaagggaat tcggaacctg ttggagtatt cccagagcat 1260
 tcagtagaag aaatttttagc tattactgag acgacag 1297

<210> 41
 <211> 1141
 <212> DNA
 <213> Chlamydia trachomatis

<400> 41
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 tatcatttcc ctatactggt ataggagatc cgagtgggac tactgttttt tctgcaggag 180
 agttaacggt aaaaaatctt gacaattcta ttgcagcttt gcctttaagt tgttttggga 240
 acttattagg gagttttact gtttttaggga gaggacactc gttgactttc gagaacatac 300


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<210> 42
<211> 822
<212> DNA
<213> Chlamydia trachomatis
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<210> 43
<211> 1634
<212> DNA
<213> Chlamydia trachomatis
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<210> 44
 <211> 1862
 <212> DNA
 <213> Chlamydia trachomatis

<400> 44
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<210> 45
 <211> 1668

<212> DNA

<213> Chlamydia trachomatis

<400> 45

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 cgtaatatgt ttacggaagc agatgaattt gttcaaagtt atctatttgc ttcataaagt 600
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 gcgagtcctg acagtttagt gctgtaattg ctattcatca gacaaaag 1668

<210> 46

<211> 2010

<212> DNA

<213> Chlamydia trachomatis

<400> 46

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<210> 47
<211> 2044
<212> DNA
<213> Chlamydia trachomatis
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tctc

2044

<210> 48

<211> 3734

<212> -DNA-

<213> *Chlamydia trachomatis*

<400> 48

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 <211> 801
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 <213> Chlamydia pneumoniae

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 <211> 252
 <212> DNA
 <213> Chlamydia pneumoniae

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 <213> Chlamydia pneumoniae

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 <213> Chlamydia pneumoniae

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 <213> Chlamydia pneumoniae

<400> 54

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<212> DNA

<213> Chlamydia pneumoniae

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 <213> Chlamydia pneumoniae

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<213> Chlamydia pneumoniae

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<211> 1086

<212> DNA

<213> Chlamydia pneumoniae

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1086

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 <213> *Chlamydia pneumoniae*

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 <213> Chlamydia pneumoniae

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 <211> 1983
 <212> DNA

<213> Chlamydia pneumoniae

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<211> 1860

<212> DNA

<213> Chlamydia pneumoniae

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 agctcggtt tgcactggca agatctacta gaagatgtct tcacagatga gcaggcagtt 1260
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 ttgaaggata atggccgcgc tactctcatt ggaaagccaa cagcaggagc tggaggtttt 1560
 gtattccaag tcactttccc taaccgttct ggaattaaag gtctttcttt aacaggatct 1620
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 ttaggattta cctccaggga tttgcaaaact tccaggttta ctgattacgt tgaggcagtg 1740
 aaaactatag ttttaacttc tttgtctgag aacgctaaga agagtgaaga gcagacttct 1800
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<210> 63
 <211> 1956
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 63
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 gcagggtcgg aagctaagcc taaagaatct aagaccgatt ctgtagagcg atggagcatc 180
 ttgcgttctg cagtgaatgc tctcatgagt ctggcagata agctgggtat tgcttctagt 240
 aacagctcgt cttctactag cagatctgca gacgtggact caacgacagc gaccgcaoct 300
 acgctcctc caccacggtt tgatgattat aagactcaag cgcaaacagc ttacgatact 360
 atctttacct caacatcact agctgacata caggctgctt tgggtgagcct ccaggatgct 420
 gtcactaata taaaggatag agcggctact gatgaggaaa ccgcaatcgc tgcggagtgg 480
 gaaactaaga atgccgatgc agttaaagtt ggccgcgcaa ttacagaatt agcgaaatat 540
 gcttcggata accaagcgat tcttgactct ttaggtaaac tgacttctt cgacctctta 600
 caggctgctc ttctccaatc tgtagcaaac aataacaaag cagctgagct tcttaaagag 660
 atgcaagata acccagtagt cccagggaaa acgctgcaa ttgctcaatc tttagttgat 720
 cagacagatg ctacagcgac acagatagag aaagatggaa atgcgattag ggatgcatat 780
 tttgcaggac agaacgctag tggagctgta gaaaatgcta aatctaataa cagtataagc 840
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 atgttcaata cggaaaatcc tgattctcaa gctgccaac aggagctcgc agcacaagct 1200
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 cagatcgctt ctgctgctgt tgtgagcgca ggagttcctc ccgctgcagc aagttctata 1380
 gggctcatctg taaaacagct ttacaagacc tcaaatcta caggttctga ttataaaaaca 1440
 cagatatcag caggttatga tgcttacaaa tccatcaatg atgcctatgg tagggcacga 1500
 aatgatgcga ctgctgatgt gataaacaat gtaagtaccc ccgctctcac acgatccgtt 1560
 cctagagcac gaacagaagc tcgaggacca gaaaaacag atcaagccct cgctagggtg 1620
 atttctggca atagcagaac tcttggagat gtctatagtc aagtttcggc actacaatct 1680

gtaatgcaga tcatccagtc gaatcctcaa gcgaataatg aggagatcag acaaaagctt 1740
 acatcggcag tgacaaagcc tccacagttt ggctatcctt atgtgcaact ttctaatagac 1800
 tctacacaga agttcatagc taaattagaa agtttggttg ctgaaggatc taggacagca 1860
 gctgaaataa aagcactttc ctttgaaacg aactccttgt ttattcagca ggtgctggtc 1920
 aatctcggtc ctctatatattc tggttatctc caataa 1956

<210> 64
 <211> 264
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 64
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 gcagttatag ttggcaaggg acctatgccc agaaccgaaa ttgtaaagaa agtttgggaa 120
 tacattaaaa aacacaactg tcaggatcaa aaaaataaac gtaatatcct tcccgatgcy 180
 aatcttgcca aagtctttgg ctctagtgat cctatcgaca tgttccaaat gaccaaagcc 240
 ctttccaaac atattgtaaa ataa 264

<210> 65
 <211> 978
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 65
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 Cys Ser Ala Ser Cys Ala Phe Ala Glu Thr Arg Leu Gly Gly Asn Phe
 20 25 30
 Val Pro Pro Ile Thr Asn Gln Gly Glu Glu Ile Leu Leu Thr Ser Asp
 35 40 45
 Phe Val Cys Ser Asn Phe Leu Gly Ala Ser Phe Ser Ser Ser Phe Ile
 50 55 60
 Asn Ser Ser Ser Asn Leu Ser Leu Leu Gly Lys Gly Leu Ser Leu Thr
 65 70 75 80
 Phe Thr Ser Cys Gln Ala Pro Thr Asn Ser Asn Tyr Ala Leu Leu Ser
 85 90 95
 Ala Ala Glu Thr Leu Thr Phe Lys Asn Phe Ser Ser Ile Asn Phe Thr
 100 105 110
 Gly Asn Gln Ser Thr Gly Leu Gly Gly Leu Ile Tyr Gly Lys Asp Ile
 115 120 125
 Val Phe Gln Ser Ile Lys Asp Leu Ile Phe Thr Thr Asn Arg Val Ala
 130 135 140
 Tyr Ser Pro Ala Ser Val Thr Thr Ser Ala Thr Pro Ala Ile Thr Thr
 145 150 155 160
 Val Thr Thr Gly Ala Ser Ala Leu Gln Pro Thr Asp Ser Leu Thr Val
 165 170 175
 Glu Asn Ile Ser Gln Ser Ile Lys Phe Phe Gly Asn Leu Ala Asn Phe
 180 185 190
 Gly Ser Ala Ile Ser Ser Ser Pro Thr Ala Val Val Lys Phe Ile Asn
 195 200 205
 Asn Thr Ala Thr Met Ser Phe Ser His Asn Phe Thr Ser Ser Gly Gly
 210 215 220
 Gly Val Ile Tyr Gly Gly Ser Ser Leu Leu Phe Glu Asn Asn Ser Gly
 225 230 235 240
 Cys Ile Ile Phe Thr Ala Asn Ser Cys Val Asn Ser Leu Lys Gly Val
 245 250 255

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Thr Pro Ser Ser Gly Thr Tyr Ala Leu Gly Ser Gly Gly Ala Ile Cys
 260 265 270
 Ile Pro Thr Gly Thr Phe Glu Leu Lys Asn Asn Gln Gly Lys Cys Thr
 275 280 285
 Phe Ser Tyr Asn Gly Thr Pro Asn Asp Ala Gly Ala Ile Tyr Ala Glu
 290 295 300
 Thr Cys Asn Ile Val Gly Asn Gln Gly Ala Leu Leu Asp Ser Asn
 305 310 315 320
 Thr Ala Ala Arg Asn Gly Gly Ala Ile Cys Ala Lys Val Leu Asn Ile
 325 330 335
 Gln Gly Arg Gly Pro Ile Glu Phe Ser Arg Asn Arg Ala Glu Lys Gly
 340 345 350
 Gly Ala Ile Phe Ile Gly Pro Ser Val Gly Asp Pro Ala Lys Gln Thr
 355 360 365
 Ser Thr Leu Thr Ile Leu Ala Ser Glu Gly Asp Ile Ala Phe Gln Gly
 370 375 380
 Asn Met Leu Asn Thr Lys Pro Gly Ile Arg Asn Ala Ile Thr Val Glu
 385 390 395 400
 Ala Gly Gly Glu Ile Val Ser Leu Ser Ala Gln Gly Gly Ser Arg Leu
 405 410 415
 Val Phe Tyr Asp Pro Ile Thr His Ser Leu Pro Thr Thr Ser Pro Ser
 420 425 430
 Asn Lys Asp Ile Thr Ile Asn Ala Asn Gly Ala Ser Gly Ser Val Val
 435 440 445
 Phe Thr Ser Lys Gly Leu Ser Thr Glu Leu Leu Pro Ala Asn
 450 455 460
 Thr Thr Thr Ile Leu Leu Gly Thr Val Lys Ile Ala Ser Gly Glu Leu
 465 470 475 480
 Lys Ile Thr Asp Asn Ala Val Val Asn Val Leu Gly Phe Ala Thr Gln
 485 490 495
 Gly Ser Gly Gln Leu Thr Leu Gly Ser Gly Gly Thr Leu Gly Leu Ala
 500 505 510
 Thr Pro Thr Gly Ala Pro Ala Ala Val Asp Phe Thr Ile Gly Lys Leu
 515 520 525
 Ala Phe Asp Pro Phe Ser Phe Leu Lys Arg Asp Phe Val Ser Ala Ser
 530 535 540
 Val Asn Ala Gly Thr Lys Asn Val Thr Leu Thr Gly Ala Leu Val Leu
 545 550 555 560
 Asp Glu His Asp Val Thr Asp Leu Tyr Asp Met Val Ser Leu Gln Ser
 565 570 575
 Pro Val Ala Ile Pro Ile Ala Val Phe Lys Gly Ala Thr Val Thr Lys
 580 585 590
 Thr Gly Phe Pro Asp Gly Glu Ile Ala Thr Pro Ser His Tyr Gly Tyr
 595 600 605
 Gln Gly Lys Trp Ser Tyr Thr Trp Ser Arg Pro Leu Leu Ile Pro Ala
 610 615 620
 Pro Asp Gly Gly Phe Pro Gly Gly Pro Ser Pro Ala Asn Thr Leu
 625 630 635 640
 Tyr Ala Val Trp Asn Ser Asp Thr Leu Val Arg Ser Thr Tyr Ile Leu
 645 650 655
 Asp Pro Glu Arg Tyr Gly Glu Ile Val Ser Asn Ser Leu Trp Ile Ser
 660 665 670
 Phe Leu Gly Asn Gln Ala Phe Ser Asp Ile Leu Gln Asp Val Leu Leu
 675 680 685
 Ile Asp His Pro Gly Leu Ser Ile Thr Ala Lys Ala Leu Gly Ala Tyr
 690 695 700
 Val Glu His Thr Pro Arg Gln Gly His Glu Gly Phe Ser Gly Arg Tyr

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705 710 715 720
 Gly Gly Tyr Gln Ala Ala Leu Ser Met Asn Tyr Thr Asp His Thr Thr
 725 730 735
 Leu Gly Leu Ser Phe Gly Gln Leu Tyr Gly Lys Thr Asn Ala Asn Pro
 740 745 750
 Tyr Asp Ser Arg Cys Ser Glu Gln Met Tyr Leu Leu Ser Phe Phe Gly
 755 760 765
 Gln Phe Pro Ile Val Thr Gln Lys Ser Glu Ala Leu Ile Ser Trp Lys
 770 775 780
 Ala Ala Tyr Gly Tyr Ser Lys Asn His Leu Asn Thr Thr Tyr Leu Arg
 785 790 795 800
 Pro Asp Lys Ala Pro Lys Ser Gln Gly Gln Trp His Asn Asn Ser Tyr
 805 810 815
 Tyr Val Leu Ile Ser Ala Glu His Pro Phe Leu Asn Trp Cys Leu Leu
 820 825 830
 Thr Arg Pro Leu Ala Gln Ala Trp Asp Leu Ser Gly Phe Ile Ser Ala
 835 840 845
 Glu Phe Leu Gly Gly Trp Gln Ser Lys Phe Thr Glu Thr Gly Asp Leu
 850 855 860
 Gln Arg Ser Phe Ser Arg Gly Lys Gly Tyr Asn Val Ser Leu Pro Ile
 865 870 875 880
 Gly Cys Ser Ser Gln Trp Phe Thr Pro Phe Lys Lys Ala Pro Ser Thr
 885 890 895
 Leu Thr Ile Lys Leu Ala Tyr Lys Pro Asp Ile Tyr Arg Val Asn Pro
 900 905 910
 His Asn Ile Val Thr Val Val Ser Asn Gln Glu Ser Thr Ser Ile Ser
 915 920 925
 Gly Ala Asn Leu Arg Arg His Gly Leu Phe Val Gln Ile His Asp Val
 930 935 940
 Val Asp Leu Thr Glu Asp Thr Gln Ala Phe Leu Asn Tyr Thr Phe Asp
 945 950 955 960
 Gly Lys Asn Gly Phe Thr Asn His Arg Val Ser Thr Gly Leu Lys Ser
 965 970 975
 Thr Phe

<210> 66
 <211> 266
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 66
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 Glu Glu Thr Ser Trp Asp Cys Ile Ala Ser Ser Tyr Asn Lys Ile Val
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 Gln Asp Lys Gly His Tyr Tyr His Arg Glu Thr Ile Leu Pro Gln Leu
 35 40 45
 Leu Pro Ser Leu Thr Leu Gly Ser Lys Ser Ser Val Leu Asp Ile Gly
 50 55 60
 Cys Gly Gln Gly Phe Leu Glu Arg Ala Leu Pro Lys Glu Cys Arg Tyr
 65 70 75 80
 Leu Gly Ile Asp Ile Ser Ser Arg Leu Ile Ala Leu Ala Lys Lys Met
 85 90 95
 Arg Ser Val Asn Ser His Gln Phe Lys Val Ala Asp Leu Ser Lys Arg
 100 105 110
 Leu Glu Phe Val Glu Pro Thr Leu Phe Ser His Ala Val Ala Ile Leu

115 120 125
 Ser Leu Gln Asn Met Glu Phe Pro Gly Glu Ala Ile Arg Asn Thr Ala
 130 135 140
 Thr Leu Leu Glu Pro Leu Gly Gln Phe Phe Ile Val Leu Asn His Pro
 145 150 155 160
 Cys Phe Arg Ile Pro Arg Ala Ser Ser Trp His Tyr Asp Glu Asn Lys
 165 170 175
 Lys Ala Ile Ser Arg His Ile Asp Arg Tyr Leu Ser Pro Met Lys Ile
 180 185 190
 Pro Ile Met Ala His Pro Gly Gln Lys Asp Ser Pro Ser Thr Leu Ser
 195 200 205
 Phe His Phe Pro Leu Ser Tyr Trp Phe Lys Glu Leu Ser Ser His Gly
 210 215 220
 Phe Leu Val Ser Gly Leu Glu Glu Trp Thr Ser Ser Lys Thr Ser Thr
 225 230 235 240
 Gly Lys Arg Ala Lys Ala Glu Asn Leu Cys Arg Lys Glu Phe Pro Leu
 245 250 255
 Phe Leu Met Ile Ser Cys Ile Lys Ile Lys
 260 265

<210> 67
 <211> 83
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 67
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 Val Lys Lys Gln Ala Lys Phe Ala Gly Ser Phe Leu Asp Glu Ile Lys
 20 25 30
 Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys Lys Tyr Ile Lys Val
 35 40 45
 Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala Ile Tyr Phe Val Asp
 50 55 60
 Leu Val Leu Arg Lys Ser Ile Thr Cys Leu Asp Gly Ile Thr Thr Phe
 65 70 75 80
 Leu Phe Gly

<210> 68
 <211> 394
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 68
 Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala

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<210> 69
<211> 476
<212> PRT
<213> Chlamydia pneumoniae
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Gly	Gly	Leu	Gly	Asp	Ala	Val	Ala	Ser	Leu	Ser	Lys	Glu	Leu	Ala	Lys
			20					25					30		
Gln	Asn	Asp	Val	Glu	Val	Leu	Leu	Pro	His	Tyr	Pro	Leu	Ile	Ser	Lys
		35					40					45			
Phe	Ser	Ser	Ser	Gln	Val	Leu	Ser	Glu	Arg	Ser	Phe	Tyr	Tyr	Glu	Phe
	50					55					60				
Leu	Gly	Lys	Gln	Gln	Ala	Ser	Ala	Ile	Ser	Tyr	Ser	Tyr	Glu	Gly	Leu
					70					75					80

Thr Leu Thr Ile Ile Thr Leu Asp Ser Gln Ile Glu Leu Phe Ser Thr
 85 90 95
 Thr Ser Val Tyr Ser Glu Asn Asn Val Val Arg Phe Ser Ala Phe Ala
 100 105 110
 Ala Ala Ala Ala Tyr Leu Gln Glu Ala Asp Pro Ala Asp Ile Val
 115 120 125
 His Leu His Asp Trp His Val Gly Leu Leu Ala Gly Leu Leu Lys Asn
 130 135 140
 Pro Leu Asn Pro Val His Ser Lys Ile Val Phe Thr Ile His Asn Phe
 145 150 155 160
 Gly Tyr Arg Gly Tyr Cys Ser Thr Gln Leu Leu Ala Ala Ser Gln Ile
 165 170 175
 Asp Asp Phe His Leu Ser His Tyr Gln Leu Phe Arg Asp Pro Gln Thr
 180 185 190
 Ser Val Leu Met Lys Gly Ala Leu Tyr Cys Ser Asp Tyr Ile Thr Thr
 195 200 205
 Val Ser Leu Thr Tyr Val Gln Glu Ile Ile Asn Asp Tyr Ser Asp Tyr
 210 215 220
 Glu Leu His Asp Ala Ile Leu Ala Arg Asn Ser Val Phe Ser Gly Ile
 225 230 235 240
 Ile Asn Gly Ile Asp Glu Asp Val Trp Asn Pro Lys Thr Asp Pro Ala
 245 250 255
 Leu Ala Val Gln Tyr Asp Ala Ser Leu Leu Ser Glu Pro Asp Val Leu
 260 265 270
 Phe Thr Lys Lys Glu Glu Asn Arg Ala Val Leu Tyr Glu Lys Leu Gly
 275 280 285
 Ile Ser Ser Asp Tyr Phe Pro Leu Ile Cys Val Ile Ser Arg Ile Val
 290 295 300
 Glu Glu Lys Gly Pro Glu Phe Met Lys Glu Ile Ile Leu His Ala Met
 305 310 315 320
 Glu His Ser Tyr Ala Phe Ile Leu Ile Gly Thr Ser Gln Asn Glu Val
 325 330 335
 Leu Leu Asn Glu Phe Arg Asn Leu Gln Asp Cys Leu Ala Ser Ser Pro
 340 345 350
 Asn Ile Arg Leu Ile Leu Asp Phe Asn Asp Pro Leu Ala Arg Leu Thr
 355 360 365
 Tyr Ala Ala Ala Asp Met Ile Cys Ile Pro Ser His Arg Glu Ala Cys
 370 375 380
 Gly Leu Thr Gln Leu Ile Ala Met Arg Tyr Gly Thr Val Pro Leu Val
 385 390 395 400
 Arg Lys Thr Gly Gly Leu Ala Asp Thr Val Ile Pro Gly Val Asn Gly
 405 410 415
 Phe Thr Phe Phe Asp Thr Asn Asn Phe Asn Glu Phe Arg Ala Met Leu
 420 425 430
 Ser Asn Ala Val Thr Thr Tyr Arg Gln Glu Pro Asp Val Trp Leu Asn
 435 440 445
 Leu Ile Glu Ser Gly Met Leu Arg Ala Ser Gly Leu Asp Ala Met Ala
 450 455 460
 Lys His Tyr Val Asn Leu Tyr Gln Ser Leu Leu Ser
 465 470 475

<210> 70
 <211> 346
 <212> PRT
 <213> Chlamydia pneumoniae

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<210> 71
<211> 1044
<212> PRT
<213> Chlamydia pneumoniae
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20 25 30

Ala	Phe	Arg	Asp	Thr	Arg	Ser	Leu	Glu	Thr	Ser	Ser	Pro	Leu	Pro	Lys
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Asp	Leu	Glu	Glu	Ser	Ile	Ala	Gln	Ile	Thr	His	Lys	Val	Val	Lys	Glu
	50				55						60				
Val	Leu	Ala	Lys	Ile	Ser	Glu	Gly	Gln	Val	Val	Thr	Val	Glu	Arg	Ile
	65			70					75						80
Gln	Asp	Leu	Val	Glu	Ser	Gln	Leu	Tyr	Ile	Ser	Gly	Leu	Gln	Asp	Val
				85					90					95	
Ala	Arg	Asp	Tyr	Ile	Val	Tyr	Arg	Asp	Gln	Arg	Lys	Ala	Glu	Arg	Gly
			100					105					110		
Asn	Ser	Ser	Ser	Ile	Ile	Ala	Ile	Ile	Arg	Arg	Asp	Gly	Gly	Ser	Ala
		115				120						125			
Lys	Phe	Asn	Pro	Met	Lys	Ile	Ser	Ala	Ala	Leu	Glu	Lys	Ala	Phe	Arg
	130					135					140				
Ala	Thr	Leu	Gln	Ile	Asn	Gly	Met	Thr	Pro	Pro	Ala	Thr	Leu	Ser	Glu
	145				150					155					160
Ile	Asn	Asp	Leu	Thr	Leu	Arg	Ile	Val	Glu	Asp	Val	Leu	Ser	Leu	His
				165					170					175	
Gly	Glu	Glu	Ala	Ile	Asn	Leu	Glu	Glu	Ile	Gln	Asp	Ile	Val	Glu	Lys
			180					185					190		
Gln	Leu	Met	Val	Ala	Gly	Tyr	Tyr	Asp	Val	Ala	Lys	Asn	Tyr	Ile	Leu
		195				200						205			
Tyr	Arg	Glu	Ala	Arg	Ala	Arg	Ala	Arg	Ala	Asn	Lys	Asp	Gln	Asp	Gly
	210					215					220				
Gln	Glu	Glu	Phe	Val	Pro	Gln	Glu	Glu	Thr	Tyr	Val	Val	Gln	Lys	Glu
	225				230					235					240
Asp	Gly	Thr	Thr	Tyr	Leu	Leu	Arg	Lys	Thr	Asp	Leu	Glu	Lys	Arg	Phe
				245					250					255	
Ser	Trp	Ala	Cys	Lys	Arg	Phe	Pro	Lys	Thr	Thr	Asp	Ser	Gln	Leu	Leu
			260					265					270		
Ala	Asp	Met	Ala	Phe	Met	Asn	Leu	Tyr	Ser	Gly	Ile	Lys	Glu	Asp	Glu
		275					280					285			
Val	Thr	Thr	Ala	Cys	Ile	Met	Ala	Ala	Arg	Ala	Asn	Ile	Glu	Arg	Glu
	290					295					300				
Pro	Asp	Tyr	Ala	Phe	Ile	Ala	Ala	Glu	Leu	Leu	Thr	Ser	Ser	Leu	Tyr
	305				310					315					320
Glu	Glu	Thr	Leu	Gly	Cys	Ser	Ser	Gln	Asp	Pro	Asn	Leu	Ser	Glu	Ile
				325					330					335	
His	Lys	Lys	His	Phe	Lys	Glu	Tyr	Ile	Leu	Asn	Gly	Glu	Glu	Tyr	Arg
			340					345					350		
Leu	Asn	Pro	Gln	Leu	Lys	Asp	Tyr	Asp	Leu	Asp	Ala	Leu	Ser	Glu	Val
		355					360					365			
Leu	Asp	Leu	Ser	Arg	Asp	Gln	Gln	Phe	Ser	Tyr	Met	Gly	Val	Gln	Asn
	370					375					380				
Leu	Tyr	Asp	Arg												

				485					490					495	
Ala	Val	Ile	Lys	Gly	Thr	Asn	Gly	Lys	Ser	Gln	Gly	Val	Ile	Pro	Phe
			500					505					510		
Ile	Lys	Val	Ala	Asn	Asp	Thr	Ala	Ile	Ala	Val	Asn	Gln	Gly	Gly	Lys
		515					520					525			
Arg	Lys	Gly	Ala	Met	Cys	Val	Tyr	Leu	Glu	Asn	Trp	His	Leu	Asp	Tyr
	530					535					540				
Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg
545					550					555					560
Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys
				565					570					575	
Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val
			580					585					590		
Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	Leu	Tyr	Glu
		595					600					605			
Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	Tyr	Lys	Lys
						615					620				
Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	Leu	Tyr	Glu
625					630					635					640
Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser
				645					650					655	
Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu
			660					665					670		
Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly
		675					680					685			
Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	Asp	Glu	Glu
	690					695					700				
Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	Asp	Asn	Val
705					710					715					720
Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	Ala	Asn	Leu
			725						730					735	
Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	Asp	Val	Leu
			740					745					750		
Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	Glu	Phe	Ser
		755					760					765			
Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	Ala	Ser	Ser
	770					775					780				
Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	Gly	Ser	Lys
785					790					795					800
Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	Leu	Lys	Glu
				805					810					815	
Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	Lys	Lys	Asp
			820					825					830		
Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	Arg	Asn	Ser
		835					840					845			
Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly
	850					855					860				
Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	Val	Lys	Ser
865					870					875					880
Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile	Pro	Asn	Thr	Tyr	Leu	Ile	Lys	Lys
			885						890					895	
Leu	Lys	Glu	Leu	Gly	Leu	Trp	Asp	Ala	Glu	Met	Leu	Asp	Asp	Leu	Lys
			900					905					910		
Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu	Ile	Glu	Arg	Ile	Pro	Asn	His	Leu
		915					920					925			
Lys	Lys	Leu	Phe	Leu	Thr	Ala	Phe	Glu	Ile	Glu	Pro	Glu	Trp	Ile	Ile
						935					940				

Glu Cys Thr Ser Arg Arg Gln Lys Trp Ile Asp Met Gly Val Ser Leu
 945 950 955 960
 Asn Leu Tyr Leu Ala Glu Pro Asp Gly Lys Lys Leu Ser Asn Met Tyr
 965 970 975
 Leu Thr Ala Trp Lys Lys Gly Leu Lys Thr Thr Tyr Tyr Leu Arg Ser
 980 985 990
 Gln Ala Ala Thr Ser Val Glu Lys Ser Phe Ile Asp Ile Asn Lys Arg
 995 1000 1005
 Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser Thr Ser Ile
 1010 1015 1020
 Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu Glu Gly Cys
 1025 1030 1035 1040
 Glu Ser Cys Gln

<210> 72
 <211> 461
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 72
 Met Met Ser Ser Lys Arg Thr Ser Lys Ile Ala Val Leu Ser Ile Leu
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 Leu Thr Phe Thr His Ser Ile Gly Phe Ala Asn Ala Asn Ser Ser Val
 20 25 30
 Gly Leu Gly Thr Val Tyr Ile Thr Ser Glu Val Val Lys Lys Pro Gln
 35 40 45
 Lys Gly Ser Glu Arg Lys Gln Ala Lys Lys Glu Pro Arg Ala Arg Lys
 50 55 60
 Gly Tyr Leu Val Pro Ser Arg Thr Leu Ser Ala Arg Ala Gln Lys
 65 70 75 80
 Met Lys Asn Ser Ser Arg Lys Glu Ser Ser Gly Gly Cys Asn Glu Ile
 85 90 95
 Ser Ala Asn Ser Thr Pro Arg Ser Val Lys Leu Arg Arg Asn Lys Arg
 100 105 110
 Ala Glu Gln Lys Ala Ala Lys Gln Gly Phe Ser Ala Phe Ser Asn Leu
 115 120 125
 Thr Leu Lys Ser Leu Leu Pro Lys Leu Pro Ser Lys Gln Lys Thr Ser
 130 135 140
 Ile His Glu Arg Glu Lys Ala Thr Ser Arg Phe Val Asn Glu Ser Gln
 145 150 155 160
 Leu Ser Ser Ala Arg Lys Arg Tyr Cys Thr Pro Ser Ser Ala Ala Pro
 165 170 175
 Ser Leu Phe Leu Glu Thr Glu Ile Val Arg Ala Pro Val Glu Arg Thr
 180 185 190
 Lys Glu Leu Gln Asp Asn Glu Ile His Ile Pro Val Val Gln Val Gln
 195 200 205
 Thr Asn Pro Lys Glu Gln Asn Thr Lys Thr Thr Lys Gln Leu Ala Ser
 210 215 220
 Gln Ala Ser Ile Gln Gln Ser Glu Gly Thr Glu Gln Ser Leu Arg Glu
 225 230 235 240
 Leu Ala Gln Gly Ala Ser Leu Pro Val Leu Val Arg Ser Asn Pro Glu
 245 250 255
 Val Ser Val Gln Arg Gln Lys Glu Glu Leu Lys Glu Leu Val Ala
 260 265 270
 Glu Arg Arg Gln Cys Lys Arg Lys Ser Val Arg Gln Ala Leu Glu Ala

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Arg	Ser	Leu	Thr	Lys	Lys	Val	Ala	Arg	Gly	Gly	Ser	Val	Thr	Ser	Thr
290						295					300				
Leu	Arg	Tyr	Asp	Pro	Glu	Lys	Ala	Ala	Glu	Ile	Lys	Ser	Arg	Arg	Asn
305						310				315					320
Cys	Lys	Val	Ser	Pro	Glu	Ala	Arg	Glu	Gln	Lys	Tyr	Ser	Ser	Cys	Lys
				325					330					335	
Arg	Asp	Ala	Arg	Ala	Asn	Gly	Lys	Gln	Asp	Lys	Thr	Thr	Pro	Ser	Glu
			340						345					350	
Asp	Ala	Ser	Gln	Glu	Glu	Gln	Gln	Thr	Gly	Ala	Gly	Leu	Val	Arg	Lys
		355					360					365			
Thr	Pro	Lys	Ser	Gln	Val	Ala	Ser	Asn	Ala	Gln	Asn	Phe	Tyr	Arg	Asn
	370					375					380				
Ser	Lys	Asn	Thr	Asn	Ile	Asp	Ser	Tyr	Leu	Thr	Ala	Asn	Gln	Tyr	Ser
385					390					395					400
Cys	Ser	Ser	Glu	Glu	Thr	Asp	Trp	Pro	Cys	Ser	Ser	Cys	Val	Ser	Lys
				405					410					415	
Arg	Arg	Thr	His	Asn	Ser	Ile	Ser	Val	Cys	Thr	Met	Val	Val	Thr	Val
			420					425						430	
Ile	Ala	Met	Ile	Val	Gly	Ala	Leu	Ile	Ile	Ala	Asn	Ala	Thr	Glu	Ser
		435				440					445				
Gln	Thr	Thr	Ser	Asp	Pro	Thr	Pro	Pro	Thr	Pro	Thr	Pro			
	450					455					460				

<210> 73
 <211> 576
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 73

Met	Thr	Asp	Phe	Pro	Thr	His	Phe	Lys	Gly	Pro	Lys	Leu	Asn	Pro	Ile
				5					10					15	
Lys	Val	Asn	Pro	Asn	Phe	Phe	Glu	Arg	Asn	Pro	Lys	Val	Ala	Arg	Val
		20						25					30		
Leu	Gln	Ile	Thr	Ala	Val	Val	Leu	Gly	Ile	Ile	Ala	Leu	Leu	Ser	Gly
		35					40					45			
Ile	Val	Leu	Ile	Ile	Gly	Thr	Pro	Leu	Gly	Ala	Pro	Ile	Ser	Met	Ile
	50					55					60				
Leu	Gly	Gly	Cys	Leu	Leu	Ala	Ser	Gly	Gly	Ala	Leu	Phe	Val	Gly	Gly
	65				70					75					80
Thr	Ile	Ala	Thr	Ile	Leu	Gln	Ala	Arg	Asn	Ser	Tyr	Lys	Lys	Ala	Val
				85					90					95	
Asn	Gln	Lys	Lys	Leu	Ser	Glu	Pro	Leu	Met	Glu	Arg	Pro	Glu	Leu	Lys
			100					105					110		
Ala	Leu	Asp	Tyr	Ser	Leu	Asp	Leu	Lys	Glu	Val	Trp	Asp	Leu	His	His
		115					120					125			
Ser	Val	Val	Lys	His	Leu	Lys	Lys	Leu	Asp	Leu	Asn	Leu	Ser	Lys	Thr
	130					135					140				
Gln	Arg	Glu	Val	Leu	Asn	Gln	Ile	Lys	Ile	Asp	Asp	Glu	Gly	Pro	Ser
	145				150					155					160
Leu	Gly	Glu	Cys	Ala	Ala	Met	Ile	Ser	Glu	Asn	Tyr	Asp	Ala	Cys	Leu
				165					170					175	
Lys	Met	Leu	Ala	Tyr	Arg	Glu	Glu	Leu	Leu	Lys	Glu	Gln	Thr	Gln	Tyr
			180					185					190		
Gln	Glu	Thr	Arg	Phe	Asn	Gln	Asn	Leu	Thr	His	Arg	Asn	Lys	Val	Leu
	195						200						205		

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Leu Ser Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly
 210 215 220
 Val Phe Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile
 225 230 235 240
 His Thr Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val
 245 250 255
 Met Val Val Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile
 260 265 270
 Leu Leu Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser
 275 280 285
 Tyr Leu Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp
 290 295 300
 Phe Tyr Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln
 305 310 315 320
 Thr Val Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu
 325 330 335
 Lys Glu Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln
 340 345 350
 Tyr Ile Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg
 355 360 365
 Val Thr Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp
 370 375 380
 Leu Glu Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala
 385 390 395 400
 Ser Pro Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys
 405 410 415
 Glu Phe Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile
 420 425 430
 Tyr Gly Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp
 435 440 445
 Met Pro Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr
 450 455 460
 Lys Leu Glu Pro Gly Ser Arg Glu Glu Leu Leu Val Glu Gly Val
 465 470 475 480
 Asn Pro Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln
 485 490 495
 Gln Leu Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr
 500 505 510
 Gly Asn Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu
 515 520 525
 Glu Gly Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Glu Ile Thr
 530 535 540
 Gln Ser Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile
 545 550 555 560
 Ile Val Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
 565 570 575

<210> 74
 <211> 361
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 74
 Met Gln Gln Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
 5 10 15
 Val Val Ala Tyr Leu Phe Lys Lys Phe Thr Asn Tyr Lys Val Ile Gly

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20 25 30
 Leu Phe Met Lys Asn Trp Glu Glu Asp Ser Glu Gly Gly Leu Cys Ser
 35 40 45
 Ser Thr Lys Asp Tyr Glu Asp Val Glu Arg Val Cys Leu Gln Leu Asp
 50 55 60
 Ile Pro Tyr Tyr Thr Val Ser Phe Ala Lys Glu Tyr Arg Glu Arg Val
 65 70 75 80
 Phe Ala Arg Phe Leu Lys Glu Tyr Ser Leu Gly Tyr Thr Pro Asn Pro
 85 90 95
 Asp Ile Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
 100 105 110
 Val Gln Glu Leu Gly Gly Asp Tyr Leu Ala Thr Gly His Tyr Cys Arg
 115 120 125
 Leu Asn Thr Glu Leu Gln Glu Thr Gln Leu Leu Arg Gly Cys Asp Pro
 130 135 140
 Gln Lys Asp Gln Ser Tyr Phe Leu Ser Gly Thr Pro Lys Ser Ala Leu
 145 150 155 160
 His Asn Val Leu Phe Pro Leu Gly Glu Met Asn Lys Thr Glu Val Arg
 165 170 175
 Ala Ile Ala Ala Gln Ala Ala Leu Pro Thr Ala Glu Lys Lys Asp Ser
 180 185 190
 Thr Gly Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Glu Phe Leu Glu
 195 200 205
 Lys Phe Leu Pro Asn Lys Thr Gly Asn Val Ile Asp Trp Asp Thr Lys
 210 215 220
 Glu Ile Val Gly Gln His Gln Gly Ala His Tyr Tyr Thr Ile Gly Gln
 225 230 235 240
 Arg Arg Gly Leu Asp Leu Gly Gly Ser Glu Lys Pro Cys Tyr Val Val
 245 250 255
 Gly Lys Asn Ile Glu Glu Asn Ser Ile Tyr Ile Val Arg Gly Glu Asp
 260 265 270
 His Pro Gln Leu Tyr Leu Arg Glu Leu Thr Ala Arg Glu Leu Asn Trp
 275 280 285
 Phe Thr Pro Pro Lys Ser Gly Cys His Cys Ser Ala Lys Val Arg Tyr
 290 295 300
 Arg Ser Pro Asp Glu Ala Cys Thr Ile Asp Tyr Ser Ser Gly Asp Glu
 305 310 315 320
 Val Lys Val Arg Phe Ser Gln Pro Val Lys Ala Val Thr Pro Gly Gln
 325 330 335
 Thr Ile Ala Phe Tyr Gln Gly Asp Thr Cys Leu Gly Ser Gly Val Ile
 340 345 350
 Asp Val Pro Met Ile Pro Ser Glu Gly
 355 360

<210> 75
 <211> 1609
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 75
 Met Val Ala Lys Lys Thr Val Arg Ser Tyr Arg Ser Ser Phe Ser His
 5 10 15
 Ser Val Ile Val Ala Ile Leu Ser Ala Gly Ile Ala Phe Glu Ala His
 20 25 30
 Ser Leu His Ser Ser Glu Leu Asp Leu Gly Val Phe Asn Lys Gln Phe
 35 40 45

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Glu	Glu	His	Ser	Ala	His	Val	Glu	Glu	Ala	Gln	Thr	Ser	Val	Leu	Lys
	50					55					60				
Gly	Ser	Asp	Pro	Val	Asn	Pro	Ser	Gln	Lys	Glu	Ser	Glu	Lys	Val	Leu
65					70					75					80
Tyr	Thr	Gln	Val	Pro	Leu	Thr	Gln	Gly	Ser	Ser	Gly	Glu	Ser	Leu	Asp
				85					90					95	
Leu	Ala	Asp	Ala	Asn	Phe	Leu	Glu	His	Phe	Gln	His	Leu	Phe	Glu	Glu
			100					105					110		
Thr	Thr	Val	Phe	Gly	Ile	Asp	Gln	Lys	Leu	Val	Trp	Ser	Asp	Leu	Asp
		115					120					125			
Thr	Arg	Asn	Phe	Ser	Gln	Pro	Thr	Gln	Glu	Pro	Asp	Thr	Ser	Asn	Ala
	130					135					140				
Val	Ser	Glu	Lys	Ile	Ser	Ser	Asp	Thr	Lys	Glu	Asn	Arg	Lys	Asp	Leu
145					150					155					160
Glu	Thr	Glu	Asp	Pro	Ser	Lys	Lys	Ser	Gly	Leu	Lys	Glu	Val	Ser	Ser
				165					170					175	
Asp	Leu	Pro	Lys	Ser	Pro	Glu	Thr	Ala	Val	Ala	Ala	Ile	Ser	Glu	Asp
			180					185					190		
Leu	Glu	Ile	Ser	Glu	Asn	Ile	Ser	Ala	Arg	Asp	Pro	Leu	Gln	Gly	Leu
		195				200					205				
Ala	Phe	Phe	Tyr	Lys	Asn	Thr	Ser	Ser	Gln	Ser	Ile	Ser	Glu	Lys	Asp
	210					215					220				
Ser	Ser	Phe	Gln	Gly	Ile	Ile	Phe	Ser	Gly	Ser	Gly	Ala	Asn	Ser	Gly
225					230					235					240
Leu	Gly	Phe	Glu	Asn	Leu	Lys	Ala	Pro	Lys	Ser	Gly	Ala	Ala	Val	Tyr
				245					250					255	
Ser	Asp	Arg	Asp	Ile	Val	Phe	Glu	Asn	Leu	Val	Lys	Gly	Leu	Ser	Phe
			260					265					270		
Ile	Ser	Cys	Glu	Ser	Leu	Glu	Asp	Gly	Ser	Ala	Ala	Gly	Val	Asn	Ile
		275					280					285			
Val	Val	Thr	His	Cys	Gly	Asp	Val	Thr	Leu	Thr	Asp	Cys	Ala	Thr	Gly
	290					295					300				
Leu	Asp	Leu	Glu	Ala	Leu	Arg	Leu	Val	Lys	Asp	Phe	Ser	Arg	Gly	Gly
305					310					315					320
Ala	Val	Phe	Thr	Ala	Arg	Asn	His	Glu	Val	Gln	Asn	Asn	Leu	Ala	Gly
				325					330					335	
Gly	Ile	Leu	Ser	Val	Val	Gly	Asn	Lys	Gly	Ala	Ile	Val	Val	Glu	Lys
			340					345					350		
Asn	Ser	Ala	Glu	Lys	Ser	Asn	Gly	Gly	Ala	Phe	Ala	Cys	Gly	Ser	Phe
		355					360					365			
Val	Tyr	Ser	Asn	Asn	Glu	Asn	Thr	Ala	Leu	Trp	Lys	Glu	Asn	Gln	Ala
	370					375					380				
Leu	Ser	Gly	Gly	Ala	Ile	Ser	Ser	Ala	Ser	Asp	Ile	Asp	Ile	Gln	Gly
385					390					395					400
Asn	Cys	Ser	Ala	Ile	Glu	Phe	Ser	Gly	Asn	Gln	Ser	Leu	Ile	Ala	Leu
			405						410					415	
Gly	Glu	His	Ile	Gly	Leu	Thr	Asp	Phe	Val	Gly	Gly	Gly	Ala	Leu	Ala
			420					425					430		
Ala	Gln	Gly	Thr	Leu	Thr	Leu	Arg	Asn	Asn	Ala	Val	Val	Gln	Cys	Val
		435					440					445			
Lys	Asn	Thr	Ser	Lys	Thr	His	Gly	Gly	Ala	Ile	Leu	Ala	Gly	Thr	Val
	450					455					460				
Asp	Leu	Asn	Glu	Thr	Ile	Ser	Glu	Val	Ala	Phe	Lys	Gln	Asn	Thr	Ala
465					470					475					480
Ala	Leu	Thr	Gly	Gly	Ala	Leu	Ser	Ala	Asn	Asp	Lys	Val	Ile	Ile	Ala
				485					490					495	
Asn	Asn	Phe	Gly	Glu	Ile	Leu	Phe	Glu	Gln	Asn	Glu	Val	Arg	Asn	His

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			500					505					510		
Gly	Gly	Ala	Ile	Tyr	Cys	Gly	Cys	Arg	Ser	Asn	Pro	Lys	Leu	Glu	Gln
		515					520					525			
Lys	Asp	Ser	Gly	Glu	Asn	Ile	Asn	Ile	Ile	Gly	Asn	Ser	Gly	Ala	Ile
		530					535				540				
Thr	Phe	Leu	Lys	Asn	Lys	Ala	Ser	Val	Leu	Glu	Val	Met	Thr	Gln	Ala
					550					555					560
Glu	Asp	Tyr	Ala	Gly	Gly	Gly	Ala	Leu	Trp	Gly	His	Asn	Val	Leu	Leu
				565					570					575	
Asp	Ser	Asn	Ser	Gly	Asn	Ile	Gln	Phe	Ile	Gly	Asn	Ile	Gly	Gly	Ser
			580					585					590		
Thr	Phe	Trp	Ile	Gly	Glu	Tyr	Val	Gly	Gly	Gly	Ala	Ile	Leu	Ser	Thr
			595				600					605			
Asp	Arg	Val	Thr	Ile	Ser	Asn	Asn	Ser	Gly	Asp	Val	Val	Phe	Lys	Gly
						615					620				
Asn	Lys	Gly	Gln	Cys	Leu	Ala	Gln	Lys	Tyr	Val	Ala	Pro	Gln	Glu	Thr
				630						635					640
Ala	Pro	Val	Glu	Ser	Asp	Ala	Ser	Ser	Thr	Asn	Lys	Asp	Glu	Lys	Ser
				645					650					655	
Leu	Asn	Ala	Cys	Ser	His	Gly	Asp	His	Tyr	Pro	Pro	Lys	Thr	Val	Glu
			660					665					670		
Glu	Glu	Val	Pro	Pro	Ser	Leu	Leu	Glu	Glu	His	Pro	Val	Val	Ser	Ser
			675				680					685			
Thr	Asp	Ile	Arg	Gly	Gly	Gly	Ala	Ile	Leu	Ala	Gln	His	Ile	Phe	Ile
						695					700				
Thr	Asp	Asn	Thr	Gly	Asn	Leu	Arg	Phe	Ser	Gly	Asn	Leu	Gly	Gly	Gly
					710					715					720
Glu	Glu	Ser	Ser	Thr	Val	Gly	Asp	Leu	Ala	Ile	Val	Gly	Gly	Gly	Ala
				725					730					735	
Leu	Leu	Ser	Thr	Asn	Glu	Val	Asn	Val	Cys	Ser	Asn	Gln	Asn	Val	Val
			740					745					750		
Phe	Ser	Asp	Asn	Val	Thr	Ser	Asn	Gly	Cys	Asp	Ser	Gly	Gly	Ala	Ile
		755					760					765			
Leu	Ala	Lys	Lys	Val	Asp	Ile	Ser	Ala	Asn	His	Ser	Val	Glu	Phe	Val
						775					780				
Ser	Asn	Gly	Ser	Gly	Lys	Phe	Gly	Gly	Ala	Val	Cys	Ala	Leu	Asn	Glu
					790					795					800
Ser	Val	Asn	Ile	Thr	Asp	Asn	Gly	Ser	Ala	Val	Ser	Phe	Ser	Lys	Asn
				805					810					815	
Arg	Thr	Arg	Leu	Gly	Gly	Ala	Gly	Val	Ala	Ala	Pro	Gln	Gly	Ser	Val
			820					825					830		
Thr	Ile	Cys	Gly	Asn	Gln	Gly	Asn	Ile	Ala	Phe	Lys	Glu	Asn	Phe	Val
		835					840					845			
Phe	Gly	Ser	Glu	Asn	Gln	Arg	Ser	Gly	Gly	Gly	Ala	Ile	Ile	Ala	Asn
						855					860				
Ser	Ser	Val	Asn	Ile	Gln	Asp	Asn	Ala	Gly	Asp	Ile	Leu	Phe	Val	Ser
					870					875					880
Asn	Ser	Thr	Gly	Ser	Tyr	Gly	Gly	Ala	Ile	Phe	Val	Gly	Ser	Leu	Val
				885					890					895	
Ala	Ser	Glu	Gly	Ser	Asn	Pro	Arg	Thr	Leu	Thr	Ile	Thr	Gly	Asn	Ser
			900					905					910		
Gly	Asp	Ile	Leu	Phe	Ala	Lys	Asn	Ser	Thr	Gln	Thr	Ala	Ala	Ser	Leu
			915				920					925			
Ser	Glu	Lys	Asp	Ser	Phe	Gly	Gly	Gly	Ala	Ile	Tyr	Thr	Gln	Asn	Leu
						935					940				
Lys	Ile	Val	Lys	Asn	Ala	Gly	Asn	Val	Ser	Phe	Gly	Asn	Arg	Ala	
					950					955					960

Pro Ser Gly Ala Gly Val Gln Ile Ala Asp Gly Gly Thr Val Cys Leu
 965 970 975
 Glu Ala Phe Gly Gly Asp Ile Leu Phe Glu Gly Asn Ile Asn Phe Asp
 980 985 990
 Gly Ser Phe Asn Ala Ile His Leu Cys Gly Asn Asp Ser Lys Ile Val
 995 1000 1005

Glu Leu Ser Ala Val Gln Asp Lys Asn Ile Ile Phe Gln Asp Ala Ile
 1010 1015 1020
 Thr Tyr Glu Glu Asn Thr Ile Arg Gly Leu Pro Asp Lys Asp Val Ser
 1025 1030 1035 1040
 Pro Leu Ser Ala Pro Ser Leu Ile Phe Asn Ser Lys Pro Gln Asp Asp
 1045 1050 1055
 Ser Ala Gln His His Glu Gly Thr Ile Arg Phe Ser Arg Gly Val Ser
 1060 1065 1070
 Lys Ile Pro Gln Ile Ala Ala Ile Gln Glu Gly Thr Leu Ala Leu Ser
 1075 1080 1085
 Gln Asn Ala Glu Leu Trp Leu Ala Gly Leu Lys Gln Glu Thr Gly Ser
 1090 1095 1100
 Ser Ile Val Leu Ser Ala Gly Ser Ile Leu Arg Ile Phe Asp Ser Gln
 1105 1110 1115 1120
 Val Asp Ser Ser Ala Pro Leu Pro Thr Glu Asn Lys Glu Glu Thr Leu
 1125 1130 1135
 Val Ser Ala Gly Val Gln Ile Asn Met Ser Ser Pro Thr Pro Asn Lys
 1140 1145 1150
 Asp Lys Ala Val Asp Thr Pro Val Leu Ala Asp Ile Ile Ser Ile Thr
 1155 1160 1165
 Val Asp Leu Ser Ser Phe Val Pro Glu Gln Asp Gly Thr Leu Pro Leu
 1170 1175 1180
 Pro Pro Glu Ile Ile Ile Pro Lys Gly Thr Lys Leu His Ser Asn Ala
 1185 1190 1195 1200
 Ile Asp Leu Lys Ile Ile Asp Pro Thr Asn Val Gly Tyr Glu Asn His
 1205 1210 1215
 Ala Leu Leu Ser Ser His Lys Asp Ile Pro Leu Ile Ser Leu Lys Thr
 1220 1225 1230
 Ala Glu Gly Met Thr Gly Thr Pro Thr Ala Asp Ala Ser Leu Ser Asn
 1235 1240 1245
 Ile Lys Ile Asp Val Ser Leu Pro Ser Ile Thr Pro Ala Thr Tyr Gly
 1250 1255 1260
 His Thr Gly Val Trp Ser Glu Ser Lys Met Glu Asp Gly Arg Leu Val
 1265 1270 1275 1280
 Val Gly Trp Gln Pro Thr Gly Tyr Lys Leu Asn Pro Glu Lys Gln Gly
 1285 1290 1295
 Ala Leu Val Leu Asn Asn Leu Trp Ser His Tyr Thr Asp Leu Arg Ala
 1300 1305 1310
 Leu Lys Gln Glu Ile Phe Ala His His Thr Ile Ala Gln Arg Met Glu
 1315 1320 1325
 Leu Asp Phe Ser Thr Asn Val Trp Gly Ser Gly Leu Gly Val Val Glu
 1330 1335 1340
 Asp Cys Gln Asn Ile Gly Glu Phe Asp Gly Phe Lys His His Leu Thr
 1345 1350 1355 1360
 Gly Tyr Ala Leu Gly Leu Asp Thr Gln Leu Val Glu Asp Phe Leu Ile
 1365 1370 1375
 Gly Gly Cys Phe Ser Gln Phe Phe Gly Lys Thr Glu Ser Gln Ser Tyr
 1380 1385 1390
 Lys Ala Lys Asn Asp Val Lys Ser Tyr Met Gly Ala Ala Tyr Ala Gly
 1395 1400 1405
 Ile Leu Ala Gly Pro Trp Leu Ile Lys Gly Ala Phe Val Tyr Gly Asn

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1410 1415 1420
 Ile Asn Asn Asp Leu Thr Thr Asp Tyr Gly Thr Leu Gly Ile Ser Thr
 1425 1430 1435 1440
 Gly Ser Trp Ile Gly Lys Gly Phe Ile Ala Gly Thr Ser Ile Asp Tyr
 1445 1450 1455
 Arg Tyr Ile Val Asn Pro Arg Arg Phe Ile Ser Ala Ile Val Ser Thr
 1460 1465 1470
 Val Val Pro Phe Val Glu Ala Glu Tyr Val Arg Ile Asp Leu Pro Glu
 1475 1480 1485
 Ile Ser Glu Gln Gly Lys Glu Val Arg Thr Phe Gln Lys Thr Arg Phe
 1490 1495 1500
 Glu Asn Val Ala Ile Pro Phe Gly Phe Ala Leu Glu His Ala Tyr Ser
 1505 1510 1515 1520
 Arg Gly Ser Arg Ala Glu Val Asn Ser Val Gln Leu Ala Tyr Val Phe
 1525 1530 1535
 Asp Val Tyr Arg Lys Gly Pro Val Ser Leu Ile Thr Leu Lys Asp Ala
 1540 1545 1550
 Ala Tyr Ser Trp Lys Ser Tyr Gly Val Asp Ile Pro Cys Lys Ala Trp
 1555 1560 1565
 Lys Ala Arg Leu Ser Asn Asn Thr Glu Trp Asn Ser Tyr Leu Ser Thr
 1570 1575 1580
 Tyr Leu Ala Phe Asn Tyr Glu Trp Arg Glu Asp Leu Ile Ala Tyr Asp
 1585 1590 1595 1600
 Phe Asn Gly Gly Ile Arg Ile Ile Phe
 1605

<210> 76
 <211> 196
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 76
 Met Thr Leu Ser Leu Val Gly Lys Glu Ala Pro Asp Phe Val Ala Gln
 5 10 15
 Ala Val Val Asn Gly Glu Thr Cys Thr Val Ser Leu Lys Asp Tyr Leu
 20 25 30
 Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val
 35 40 45
 Cys Pro Thr Glu Leu His Ala Phe Gln Asp Ala Leu Gly Glu Phe His
 50 55 60
 Thr Arg Gly Ala Glu Val Ile Gly Cys Ser Val Asp Asp Ile Ala Thr
 65 70 75 80
 His Gln Gln Trp Leu Ala Thr Lys Lys Lys Gln Gly Gly Ile Glu Gly
 85 90 95
 Ile Thr Tyr Pro Leu Leu Ser Asp Glu Asp Lys Val Ile Ser Arg Ser
 100 105 110
 Tyr His Val Leu Lys Pro Glu Glu Leu Ser Phe Arg Gly Val Phe
 115 120 125
 Leu Ile Asp Lys Gly Gly Ile Arg His Leu Val Val Asn Asp Leu
 130 135 140
 Pro Leu Gly Arg Ser Ile Glu Glu Glu Leu Arg Thr Leu Asp Ala Leu
 145 150 155 160
 Ile Phe Phe Glu Thr Asn Gly Leu Val Cys Pro Ala Asn Trp His Glu
 165 170 175
 Gly Glu Arg Ala Met Ala Pro Asn Glu Gly Leu Gln Asn Tyr Phe
 180 185 190

Gly Thr Ile Asp
195

<210> 77
<211> 619
<212> PRT
<213> Chlamydia pneumoniae

<400> 77
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 35 40 45
Leu Pro Trp Lys Glu Leu Leu Phe Gly Trp Asp Leu Ser Gln Gln Thr
 50 55 60
Gln Gln Ala Arg Leu Gln Leu Val Leu Glu Glu Lys Pro Thr Thr Asn
 65 70 75 80
Tyr Cys Gln Lys Val Leu Ser Asn Tyr Val Arg Ser Leu Asn Asp Tyr
 85 90 95
His Ala Gly Ile Thr Phe Tyr Arg Thr Glu Ser Ala Tyr Ile Pro Tyr
 100 105 110
Val Leu Lys Leu Ser Glu Asp Gly His Val Phe Val Val Asp Val Gln
 115 120 125
Thr Ser Gln Gly Asp Ile Tyr Leu Gly Asp Glu Ile Leu Glu Val Asp
 130 135 140
Gly Met Gly Ile Arg Glu Ala Ile Glu Ser Leu Arg Phe Gly Arg Gly
 145 150 155 160
Ser Ala Thr Asp Tyr Ser Ala Ala Val Arg Ser Leu Thr Ser Arg Ser
 165 170 175
Ala Ala Phe Gly Asp Ala Val Pro Ser Gly Ile Ala Met Leu Lys Leu
 180 185 190
Arg Arg Pro Ser Gly Leu Ile Arg Ser Thr Pro Val Arg Trp Arg Tyr
 195 200 205
Thr Pro Glu His Ile Gly Asp Phe Ser Leu Val Ala Pro Leu Ile Pro
 210 215 220
Glu His Lys Pro Gln Leu Pro Thr Gln Ser Cys Val Leu Phe Arg Ser
 225 230 235 240
Gly Val Asn Ser Gln Ser Ser Ser Ser Ser Leu Phe Ser Ser Tyr Met
 245 250 255
Val Pro Tyr Phe Trp Glu Glu Leu Arg Val Gln Asn Lys Gln Arg Phe
 260 265 270
Asp Ser Asn His His Ile Gly Ser Arg Asn Gly Phe Leu Pro Thr Phe
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Gly Pro Ile Leu Trp Glu Gln Asp Lys Gly Pro Tyr Arg Ser Tyr Ile
 290 295 300
Phe Lys Ala Lys Asp Ser Gln Gly Asn Pro His Arg Ile Gly Phe Leu
 305 310 315 320
Arg Ile Ser Ser Tyr Val Trp Thr Asp Leu Glu Gly Leu Glu Glu Asp
 325 330 335
His Lys Asp Ser Pro Trp Glu Leu Phe Gly Glu Ile Ile Asp His Leu
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Glu Lys Glu Thr Asp Ala Leu Ile Ile Asp Gln Thr His Asn Pro Gly
 355 360 365
Gly Ser Val Phe Tyr Leu Tyr Ser Leu Leu Ser Met Leu Thr Asp His

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370 375 380
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 385 390 395 400
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 405 410 415
 Glu Gln Ala Val Ala Val Leu Gly Glu Thr Met Glu Gly Tyr Cys Met
 420 425 430
 Asp Met His Ala Val Ala Ser Leu Gln Asn Phe Ser Gln Ser Val Leu
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 Ser Ser Trp Val Ser Gly Asp Ile Asn Leu Ser Lys Pro Met Pro Leu
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 Leu Gly Phe Ala Gln Val Arg Pro His Pro Lys His Gln Tyr Thr Lys
 465 470 475 480
 Pro Leu Phe Met Leu Ile Asp Glu Asp Asp Phe Ser Cys Gly Asp Leu
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 500 505 510
 Pro Thr Ala Gly Ala Gly Gly Phe Val Phe Gln Val Thr Phe Pro Asn
 515 520 525
 Arg Ser Gly Ile Lys Gly Leu Ser Leu Thr Gly Ser Leu Ala Val Arg
 530 535 540
 Lys Asp Gly Glu Phe Ile Glu Asn Leu Gly Val Ala Pro His Ile Asp
 545 550 555 560
 Leu Gly Phe Thr Ser Arg Asp Leu Gln Thr Ser Arg Phe Thr Asp Tyr
 565 570 575
 Val Glu Ala Val Lys Thr Ile Val Leu Thr Ser Leu Ser Glu Asn Ala
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 Lys Lys Ser Glu Glu Gln Thr Ser Pro Gln Glu Thr Pro Glu Val Ile
 595 600 605
 Arg Val Ser Tyr Pro Thr Thr Thr Ser Ala Ser
 610 615

<210> 78
 <211> 651
 <212> PRT
 <213> Chlamydia pneumoniae

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 35 40 45
 Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg Ser Ala
 50 55 60
 Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala Ser Ser
 65 70 75 80
 Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser Thr Thr
 85 90 95
 Ala Thr Ala Pro Thr Pro Pro Pro Thr Phe Asp Asp Tyr Lys Thr
 100 105 110
 Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser Leu Ala
 115 120 125
 Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr Asn Ile
 130 135 140

Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala Glu Trp
 145 150 155 160
 Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile Thr Glu
 165 170 175
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 180 185 190 -----
 Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln Ser Val
 195 200 205
 Ala Asn Asn Asn Lys Ala Ala Glu Leu Leu Lys Glu Met Gln Asp Asn
 210 215 220
 Pro Val Val Pro Gly Lys Thr Pro Ala Ile Ala Gln Ser Leu Val Asp
 225 230 235 240
 Gln Thr Asp Ala Thr Ala Thr Gln Ile Glu Lys Asp Gly Asn Ala Ile
 245 250 255
 Arg Asp Ala Tyr Phe Ala Gly Gln Asn Ala Ser Gly Ala Val Glu Asn
 260 265 270
 Ala Lys Ser Asn Asn Ser Ile Ser Asn Ile Asp Ser Ala Lys Ala Ala
 275 280 285
 Ile Ala Thr Ala Lys Thr Gln Ile Ala Glu Ala Gln Lys Lys Phe Pro
 290 295 300
 Asp Ser Pro Ile Leu Gln Glu Ala Glu Gln Met Val Ile Gln Ala Glu
 305 310 315 320
 Lys Asp Leu Lys Asn Ile Lys Pro Ala Asp Gly Ser Asp Val Pro Asn
 325 330 335
 Pro Gly Thr Thr Val Gly Gly Ser Lys Gln Gln Gly Ser Ser Ile Gly
 340 345 350
 Ser Ile Arg Val Ser Met Leu Leu Asp Asp Ala Glu Asn Glu Thr Ala
 355 360 365
 Ser Ile Leu Met Ser Gly Phe Arg Gln Met Ile His Met Phe Asn Thr
 370 375 380
 Glu Asn Pro Asp Ser Gln Ala Ala Gln Gln Glu Leu Ala Ala Gln Ala
 385 390 395 400
 Arg Ala Ala Lys Ala Ala Gly Asp Asp Ser Ala Ala Ala Ala Leu Ala
 405 410 415
 Asp Ala Gln Lys Ala Leu Glu Ala Ala Leu Gly Lys Ala Gly Gln Gln
 420 425 430
 Gln Gly Ile Leu Asn Ala Leu Gly Gln Ile Ala Ser Ala Ala Val Val
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 Ser Ala Gly Val Pro Pro Ala Ala Ser Ser Ile Gly Ser Ser Val
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 Lys Gln Leu Tyr Lys Thr Ser Lys Ser Thr Gly Ser Asp Tyr Lys Thr
 465 470 475 480
 Gln Ile Ser Ala Gly Tyr Asp Ala Tyr Lys Ser Ile Asn Asp Ala Tyr
 485 490 495
 Gly Arg Ala Arg Asn Asp Ala Thr Arg Asp Val Ile Asn Asn Val Ser
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 Thr Pro Ala Leu Thr Arg Ser Val Pro Arg Ala Arg Thr Glu Ala Arg
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 Gly Pro Glu Lys Thr Asp Gln Ala Leu Ala Arg Val Ile Ser Gly Asn
 530 535 540
 Ser Arg Thr Leu Gly Asp Val Tyr Ser Gln Val Ser Ala Leu Gln Ser
 545 550 555 560
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 Arg Gln Lys Leu Thr Ser Ala Val Thr Lys Pro Pro Gln Phe Gly Tyr
 580 585 590
 Pro Tyr Val Gln Leu Ser Asn Asp Ser Thr Gln Lys Phe Ile Ala Lys

595 600 605
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 610 615 620
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<210> 79
 <211> 87
 <212> PRT
 <213> Chlamydia pneumoniae

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 35 40 45
 Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys
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<210> 80
 <211> 3048
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 81

<211> 1038

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 81

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<210> 82

<211> 3159

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 82

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<210> 83
 <211> 4593
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<212> DNA
<213> Chlamydia trachomatis serovar D
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 <211> 1179
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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 <211> 585
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 87
 <211> 258
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 87
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<210> 88
 <211> 1182
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 89
 <211> 246
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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 cttaaaagat acgtcaagat tgttttgatg aatatttttg gctttggatt ttccatctat 180
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<210> 90
 <211> 1137
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 92
 <211> 1074
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 93
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<212> DNA
<213> Chlamydia trachomatis serovar D

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<210> 94
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<212> DNA
<213> Chlamydia trachomatis serovar D

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 gggtcgcaag agcttgctga ttattgtact aagaaaggaa ctatcgtaga caaagaagct 2220
 gtgctatctg ttgttgcccc tgcgcttaaa aattatttta gtccagaatt tatcaatcgt 2280
 atcgatgaca ttctgccttt cgttcctttg actacggaag acattgtaaa aattgtcggg 2340
 attcaaatga atcgggttgc tttacgtttg ctggaaagaa aaatttcggt aacttgggat 2400
 gattctttag tgctatttct cagtgaagca ggttatgaca gcgcttttgg agctcgccct 2460
 ctgaagcgtt tgatacagca aaaagtagtg actatgttgt ctaaagctct tttgaaagga 2520
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<210> 95

<211> 1016

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 95

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			20					25					30		
Asn	Val	Thr	Thr	Pro	Phe	Lys	Gly	Asp	Asp	Val	Tyr	Leu	Asn	Gly	Asp
			35				40					45			
Cys	Ala	Phe	Val	Asn	Val	Tyr	Ala	Gly	Ala	Glu	Asn	Gly	Ser	Ile	Ile
	50					55				60					
Ser	Ala	Asn	Gly	Asp	Asn	Leu	Thr	Ile	Thr	Gly	Gln	Asn	His	Thr	Leu
	65				70					75				80	
Ser	Phe	Thr	Asp	Ser	Gln	Gly	Pro	Val	Leu	Gln	Asn	Tyr	Ala	Phe	Ile
			85					90					95		
Ser	Ala	Gly	Glu	Thr	Leu	Thr	Leu	Lys	Asp	Phe	Ser	Ser	Leu	Met	Phe
		100						105					110		
Ser	Lys	Asn	Val	Ser	Cys	Gly	Glu	Lys	Gly	Met	Ile	Ser	Gly	Lys	Thr
		115					120					125			
Val	Ser	Ile	Ser	Gly	Ala	Gly	Glu	Val	Ile	Phe	Trp	Asp	Asn	Ser	Val
	130					135					140				
Gly	Tyr	Ser	Pro	Leu	Ser	Ile	Val	Pro	Ala	Ser	Thr	Pro	Thr	Pro	Pro
	145					150				155				160	
Ala	Pro	Ala	Pro	Ala	Pro	Ala	Ala	Ser	Ser	Leu	Ser	Pro	Thr	Val	
			165					170					175		
Ser	Asp	Ala	Arg	Lys	Gly	Ser	Ile	Phe	Ser	Val	Glu	Thr	Ser	Leu	Glu
			180					185					190		

Ile Ser Gly Val Lys Lys Gly Val Met Phe Asp Asn Asn Ala Gly Asn
 195 200 205
 Phe Gly Thr Val Phe Arg Gly Asn Ser Asn Asn Asn Ala Gly Ser Gly
 210 215 220
 Gly Ser Gly Ser Ala Thr Thr Pro Ser Phe Thr Val Lys Asn Cys Lys
 225 230 235 240
 Gly Lys Val Ser Phe Thr Asp Asn Val Ala Ser Cys Gly Gly Gly Val
 245 250 255
 Val Tyr Lys Gly Thr Val Leu Phe Lys Asp Asn Glu Gly Gly Ile Phe
 260 265 270
 Phe Arg Gly Asn Thr Ala Tyr Asp Asp Leu Gly Ile Leu Ala Ala Thr
 275 280 285
 Ser Arg Asp Gln Asn Thr Glu Thr Gly Gly Gly Gly Val Ile Cys
 290 295 300
 Ser Pro Asp Asp Ser Val Lys Phe Glu Gly Asn Lys Gly Ser Ile Val
 305 310 315 320
 Phe Asp Tyr Asn Phe Ala Lys Gly Arg Gly Gly Ser Ile Leu Thr Lys
 325 330 335
 Glu Phe Ser Leu Val Ala Asp Asp Ser Val Val Phe Ser Asn Asn Thr
 340 345 350
 Ala Glu Lys Gly Gly Gly Ala Ile Tyr Ala Pro Thr Ile Asp Ile Ser
 355 360 365
 Thr Asn Gly Gly Ser Ile Leu Phe Glu Arg Asn Arg Ala Ala Glu Gly
 370 375 380
 Gly Ala Ile Cys Val Ser Glu Ala Ser Ser Gly Ser Thr Gly Asn Leu
 385 390 395 400
 Thr Leu Ser Ala Ser Asp Gly Asp Ile Val Phe Ser Gly Asn Met Thr
 405 410 415
 Ser Asp Arg Pro Gly Glu Arg Ser Ala Ala Arg Ile Leu Ser Asp Gly
 420 425 430
 Thr Thr Val Ser Leu Asn Ala Ser Gly Leu Ser Lys Leu Ile Phe Tyr
 435 440 445
 Asp Pro Val Val Gln Asn Asn Ser Ala Ala Gly Ala Ser Thr Pro Ser
 450 455 460
 Pro Ser Ser Ser Ser Met Pro Gly Ala Val Thr Ile Asn Gln Ser Gly
 465 470 475 480
 Asn Gly Ser Val Ile Phe Thr Ala Glu Ser Leu Thr Pro Ser Glu Lys
 485 490 495
 Leu Gln Val Leu Asn Ser Thr Ser Asn Phe Pro Gly Ala Leu Thr Val
 500 505 510
 Ser Gly Gly Glu Leu Val Val Thr Glu Gly Ala Thr Leu Thr Thr Gly
 515 520 525
 Thr Ile Thr Ala Thr Ser Gly Arg Val Thr Leu Gly Ser Gly Ala Ser
 530 535 540
 Leu Ser Ala Val Ala Gly Ala Ala Asn Asn Asn Tyr Thr Cys Thr Val
 545 550 555 560
 Ser Lys Leu Gly Ile Asp Leu Glu Ser Phe Leu Thr Pro Asn Tyr Lys
 565 570 575
 Thr Ala Ile Leu Gly Ala Asp Gly Thr Val Thr Val Asn Ser Gly Ser
 580 585 590
 Thr Leu Asp Leu Val Met Glu Ser Glu Ala Glu Val Tyr Asp Asn Pro
 595 600 605
 Leu Phe Val Gly Ser Leu Thr Ile Pro Phe Val Thr Leu Ser Ser Ser
 610 615 620
 Ser Ala Ser Asn Gly Val Thr Lys Asn Ser Val Thr Ile Asn Asp Ala
 625 630 635 640
 Asp Ala Ala His Tyr Gly Tyr Gln Gly Ser Trp Ser Ala Asp Trp Thr

10007693-120304

645 650 655
 Lys Pro Pro Leu Ala Pro Asp Ala Lys Gly Met Val Pro Pro Asn Thr
 660 665 670
 Asn Asn Thr Leu Tyr Leu Thr Trp Arg Pro Ala Ser Asn Tyr Gly Glu
 675 680 685
 Tyr Arg Leu Asp Pro Gln Arg Lys Gly Glu Leu Val Pro Asn Ser Leu
 690 695 700
 Trp Val Ala Gly Ser Ala Leu Arg Thr Phe Thr Asn Gly Leu Lys Glu
 705 710 715 720
 His Tyr Val Ser Arg Asp Val Gly Phe Val Ala Ser Leu His Ala Leu
 725 730 735
 Gly Asp Tyr Ile Leu Asn Tyr Thr Gln Asp Asp Arg Asp Gly Phe Leu
 740 745 750
 Ala Arg Tyr Gly Gly Phe Gln Ala Thr Ala Ala Ser His Tyr Glu Asn
 755 760 765
 Gly Ser Ile Phe Gly Val Ala Phe Gly Gln Leu Tyr Gly Gln Thr Lys
 770 775 780
 Ser Arg Met Tyr Tyr Ser Lys Asp Ala Gly Asn Met Thr Met Leu Ser
 785 790 795 800
 Cys Phe Gly Arg Ser Tyr Val Asp Ile Lys Gly Thr Glu Thr Val Met
 805 810 815
 Tyr Trp Glu Thr Ala Tyr Gly Tyr Ser Val His Arg Met His Thr Gln
 820 825 830
 Tyr Phe Asn Asp Lys Thr Gln Lys Phe Asp His Ser Lys Cys His Trp
 835 840 845
 His Asn Asn Asn Tyr Tyr Ala Phe Val Gly Ala Glu His Asn Phe Leu
 850 855 860
 Glu Tyr Cys Ile Pro Thr Arg Gln Phe Ala Arg Asp Tyr Glu Leu Thr
 865 870 875 880
 Gly Phe Met Arg Phe Glu Met Ala Gly Gly Trp Ser Ser Ser Thr Arg
 885 890 895
 Glu Thr Gly Ser Leu Thr Arg Tyr Phe Ala Arg Gly Ser Gly His Asn
 900 905 910
 Met Ser Leu Pro Ile Gly Ile Val Ala His Ala Val Ser His Val Arg
 915 920 925
 Arg Ser Pro Pro Ser Lys Leu Thr Leu Asn Met Gly Tyr Arg Pro Asp
 930 935 940
 Ile Trp Arg Val Thr Pro His Cys Asn Met Glu Ile Ile Ala Asn Gly
 945 950 955 960
 Val Lys Thr Pro Ile Gln Gly Ser Pro Leu Ala Arg His Ala Phe Phe
 965 970 975
 Leu Glu Val His Asp Thr Leu Tyr Ile His His Phe Gly Arg Ala Tyr
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 995 1000 1005
 Ser Met Gly Leu Asn Arg Ile Phe
 1010 1015

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 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 96
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10007699-100904

Ser Lys Arg Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val
 20 25 30
 Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
 35 40 45
~~Asn Asn Trp Leu Pro Thr Glu Ile Pro Met Gly Lys Asp Ile Glu Leu~~
~~50 55 60~~
 Trp Lys Ser Asp Arg Leu Ser Glu Asp Glu Arg Val Ile Leu Leu
 65 70 75 80
 Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
 85 90 95
 Val Leu Ala Ile Phe Lys His Val Thr Asn Pro Glu Ala Arg Gln Tyr
 100 105 110
 Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
 115 120 125
 Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Lys Glu Ile Phe Asn Ala
 130 135 140
 Tyr Asn Glu Arg Ala Ala Ile Lys Ala Lys Asp Asp Phe Gln Met Glu
 145 150 155 160
 Ile Thr Gly Lys Val Leu Asp Pro Asn Phe Arg Thr Asp Ser Val Glu
 165 170 175
 Gly Leu Gln Glu Phe Val Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
 180 185 190
 Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
 195 200 205
 Arg Gln Asn Lys Met Ile Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
 210 215 220
 Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
 225 230 235 240
 Ile Lys Glu Glu Asn Pro Glu Ile Trp Thr Pro Glu Leu Gln Gln Glu
 245 250 255
~~Ile Val Glu Leu Ile Lys Arg Ala Val Asp Leu Glu Ile Glu Tyr Ala~~
~~260 265 270~~
 Gln Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ala Ser Met Phe
 275 280 285
 Ile Asp Tyr Val Gln His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
 290 295 300
 Leu Lys Pro Ile Tyr His Thr Lys Asn Pro Phe Pro Trp Met Ser Glu
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 Glu Tyr Gln His Ala Ala Ser Leu Thr Trp
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 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 97
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 35 40 45
 His Met Pro Leu Pro Glu Asp Leu Glu Ser Ser Ile Arg Ser Ile Thr

	50					55					60					
His 65	Gln	Val	Val	Lys	Glu 70	Val	Val	Gln	Lys	Ile 75	Thr	Asp	Gly	Gln	Val 80	
Val	Thr	Val	Glu	Arg 85	Ile	Gln	Asp	Met	Val 90	Glu	Ser	Gln	Leu	Tyr 95	Val	
Asn	Gly	Leu	Gln 100	Asp	Val	Ala	Arg	Asp 105	Tyr	Ile	Val	Tyr	Arg 110	Asp	Asp	
Arg	Lys	Ala 115	His	Arg	Lys	Lys	Ser 120	Trp	Gln	Ser	Leu	Ser 125	Val	Val	Arg	
Arg	Cys 130	Gly	Thr	Val	Val	His 135	Phe	Asn	Pro	Met	Lys 140	Ile	Ser	Ala	Ala	
Leu 145	Glu	Lys	Ala	Phe	Arg 150	Ala	Thr	Asp	Lys	Thr 155	Glu	Gly	Met	Thr	Pro 160	
Ser	Ser	Val	Arg	Glu 165	Glu	Ile	Asn	Ala	Leu 170	Thr	Gln	Asn	Ile	Val 175	Ala	
Glu	Ile	Glu	Glu 180	Cys	Cys	Pro	Gln	Gln 185	Asp	Arg	Arg	Ile	Asp 190	Ile	Glu	
Lys	Ile	Gln 195	Asp	Ile	Val	Glu	Gln 200	Gln	Leu	Met	Val	Val 205	Gly	His	Tyr	
Ala	Val 210	Ala	Lys	Asn	Tyr	Ile 215	Leu	Tyr	Arg	Glu	Ala 220	Arg	Ala	Arg	Val	
Arg 225	Asp	Asn	Arg	Glu	Glu 230	Asp	Gly	Ser	Thr	Glu 235	Lys	Thr	Ile	Ala	Glu 240	
Glu	Ala	Val	Glu	Val 245	Leu	Ser	Lys	Asp	Gly 250	Ser	Thr	Tyr	Thr	Met 255	Thr	
His	Ser	Gln 260	Leu	Leu	Ala	His	Leu 265	Ala	Arg	Ala	Cys	Ser	Arg 270	Phe	Pro	
Glu	Thr 275	Thr	Asp	Ala	Ala	Leu 280	Leu	Thr	Asp	Met	Ala 285	Phe	Ala	Asn	Phe	
Tyr 290	Ser	Gly	Ile	Lys	Glu	Ser 295	Glu	Val	Val	Leu	Ala 300	Cys	Ile	Met	Ala	
Ala 305	Arg	Ala	Asn	Ile	Glu 310	Lys	Glu	Pro	Asp	Tyr 315	Ala	Phe	Val	Ala	Ala 320	
Glu	Leu	Leu	Leu	Asp 325	Val	Val	Tyr	Lys	Glu 330	Ala	Leu	Gly	Lys	Ser 335	Lys	
Tyr	Ala	Glu	Asp 340	Leu	Glu	Gln	Ala	His 345	Arg	Asp	His	Phe	Lys 350	Arg	Tyr	
Ile	Ala	Glu 355	Gly	Asp	Thr	Tyr	Arg 360	Leu	Asn	Ala	Glu	Leu 365	Lys	His	Leu	
Phe	Asp 370	Leu	Asp	Ala	Leu	Ala 375	Asp	Ala	Met	Asp	Leu 380	Ser	Arg	Asp	Leu	
Gln 385	Phe	Ser	Tyr	Met	Gly 390	Ile	Gln	Asn	Leu	Tyr 395	Asp	Arg	Tyr	Phe	Asn 400	
His	His	Glu	Gly	Cys 405	Arg	Leu	Glu	Thr	Pro 410	Gln	Ile	Phe	Trp	Met 415	Arg	
Val	Ala	Met	Gly 420	Leu	Ala	Leu	Asn	Glu 425	Gln	Asp	Lys	Thr	Ser 430	Trp	Ala	
Ile	Thr	Phe 435	Tyr	Asn	Leu	Leu	Ser 440	Thr	Phe	Arg	Tyr	Thr 445	Pro	Ala	Thr	
Pro	Thr 450	Leu	Phe	Asn	Ser	Gly 455	Met	Arg	His	Ser	Gln 460	Leu	Ser	Ser	Cys	
Tyr 465	Leu	Ser	Thr	Val	Gln 470	Asp	Asn	Leu	Val	Asn 475	Ile	Tyr	Lys	Val	Ile 480	
Ala	Asp	Asn	Ala	Met 485	Leu	Ser	Lys	Trp	Ala 490	Gly	Gly	Ile	Gly	Asn 495	Asp	
Trp	Thr	Ala	Ile 500	Arg	Ala	Thr	Gly	Ala 505	Leu	Ile	Lys	Gly	Thr 510	Asn	Gly	

Arg	Ser	Gln	Gly	Val	Ile	Pro	Phe	Ile	Lys	Val	Thr	Asn	Asp	Thr	Ala
Val	Ala	Val	Asn	Gln	Gly	Gly	Lys	Arg	Lys	Gly	Ala	Val	Cys	Val	Tyr
Leu	Glu	Val	Trp	His	Leu	Asp	Tyr	Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys
545	530	515	550	565	550	535	520	555	570	540	525	575	560	545	530
Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg	Ala	His	Asp	Val	Asn	Ile	Ala	Ser
Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys	Arg	Leu	Gln	Gln	Lys	Gly	Thr	Trp
Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val	Pro	Gly	Leu	His	Asp	Ala	Tyr	Gly
Glu	Glu	Phe	Glu	Arg	Leu	Tyr	Glu	Glu	Tyr	Glu	Arg	Lys	Val	Asp	Thr
Gly	Glu	Ile	Arg	Leu	Phe	Lys	Lys	Val	Glu	Ala	Glu	Asp	Leu	Trp	Arg
Lys	Met	Leu	Ser	Met	Leu	Phe	Glu	Thr	Gly	His	Pro	Trp	Met	Thr	Phe
Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser	Ala	Gln	Asp	His	Lys	Gly	Val	Val
Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu	Ile	Leu	Leu	Asn	Cys	Ser	Glu	Thr
Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly	Ser	Ile	Asn	Leu	Val	Gln	His	Ile
Val	Gly	Asp	Gly	Leu	Asp	Glu	Glu	Lys	Leu	Ser	Glu	Thr	Ile	Ser	Ile
Ala	Val	Arg	Met	Leu	Asp	Asn	Val	Ile	Asp	Ile	Asn	Phe	Tyr	Pro	Thr
Lys	Glu	Ala	Lys	Glu	Ala	Asn	Phe	Ala	His	Arg	Ala	Ile	Gly	Leu	Gly
Val	Met	Gly	Phe	Gln	Asp	Ala	Leu	Tyr	Lys	Leu	Asp	Ile	Ser	Tyr	Ala
Ser	Gln	Glu	Ala	Val	Glu	Phe	Ala	Asp	Tyr	Ser	Ser	Glu	Leu	Ile	Ser
Tyr	Tyr	Ala	Ile	Gln	Ala	Ser	Cys	Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr
Tyr	Ser	Ser	Tyr	Lys	Gly	Ser	Lys	Trp	Asp	Arg	Gly	Leu	Leu	Pro	Ile
Asp	Thr	Ile	Gln	Leu	Leu	Ala	Asn	Tyr	Arg	Gly	Glu	Ala	Asn	Leu	Gln
Met	Asp	Thr	Ser	Ser	Arg	Lys	Asp	Trp	Glu	Pro	Ile	Arg	Ser	Leu	Val
Lys	Glu	His	Gly	Met	Arg	His	Cys	Gln	Leu	Met	Ala	Ile	Ala	Pro	Thr
Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly	Val	Thr	Gln	Ser	Ile	Glu	Pro	Thr
Tyr	Lys	His	Leu	Phe	Val	Lys	Ser	Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile
Pro	Asn	Val	Tyr	Leu	Ile	Glu	Lys	Leu	Lys	Lys	Leu	Gly	Ile	Trp	Asp
Ala	Asp	Met	Leu	Asp	Asp	Leu	Lys	Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu
Ile	Glu	Arg	Ile	Pro	Asp	His	Leu	Lys	His	Ile	Phe	Leu	Thr	Ala	Phe
Glu	Ile	Glu	Pro	Glu	Trp	Ile	Ile	Glu	Cys	Ala	Ser	Arg	Arg	Gln	Lys
Trp	Ile	Asp	Met	Gly	Gln	Ser	Leu	Asn	Leu	Tyr	Leu	Ala	Gln	Pro	Asp

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<213> Chlamydia trachomatis serovar D

<400> 98

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			20					25					30		
Val	Asp	Leu	His	Ala	Gly	Gly	Gln	Ser	Val	Asn	Glu	Leu	Val	Tyr	Val
		35					40				45				
Gly	Pro	Gln	Ala	Val	Leu	Leu	Leu	Asp	Gln	Ile	Arg	Asp	Leu	Phe	Val
	50					55					60				
Gly	Ser	Lys	Asp	Ser	Gln	Ala	Glu	Gly	Gln	Tyr	Arg	Leu	Ile	Val	Gly
	65				70					75					80
Asp	Pro	Ser	Ser	Phe	Gln	Glu	Lys	Asp	Ala	Asp	Thr	Leu	Pro	Gly	Lys
				85					90					95	
Val	Glu	Gln	Ser	Thr	Leu	Phe	Ser	Val	Thr	Asn	Pro	Val	Val	Phe	Gln
			100					105					110		
Gly	Val	Asp	Gln	Gln	Asp	Gln	Val	Ser	Ser	Gln	Gly	Leu	Ile	Cys	Ser
		115					120					125			
Phe	Thr	Ser	Ser	Asn	Leu	Asp	Ser	Pro	Arg	Asp	Gly	Glu	Ser	Phe	Leu
	130					135					140				
Gly	Ile	Ala	Phe	Val	Gly	Asp	Ser	Ser	Lys	Ala	Gly	Ile	Thr	Leu	Thr
	145				150					155					160
Asp	Val	Lys	Ala	Ser	Leu	Ser	Gly	Ala	Ala	Leu	Tyr	Ser	Thr	Glu	Asp
				165					170					175	
Leu	Ile	Phe	Glu	Lys	Ile	Lys	Gly	Gly	Leu	Glu	Phe	Ala	Ser	Cys	Ser
			180					185					190		
Ser	Leu	Glu	Gln	Gly	Gly	Ala	Cys	Ala	Ala	Gln	Ser	Ile	Leu	Ile	His
		195					200					205			
Asp	Cys	Gln	Gly	Leu	Gln	Val	Lys	His	Cys	Thr	Thr	Ala	Val	Asn	Ala
	210					215					220				
Glu	Gly	Ser	Ser	Ala	Asn	Asp	His	Leu	Gly	Phe	Gly	Gly	Gly	Ala	Phe
	225				230					235					240
Phe	Val	Thr	Gly	Ser	Leu	Ser	Gly	Glu	Lys	Ser	Leu	Tyr	Met	Pro	Ala
				245					250					255	
Gly	Asp	Met	Val	Val	Ala	Asn	Cys	Asp	Gly	Ala	Ile	Ser	Phe	Glu	Gly
			260					265					270		
Asn	Ser	Ala	Asn	Phe	Ala	Asn	Gly	Gly	Ala	Ile	Ala	Ala	Ser	Gly	Lys
		275					280					285			
Val	Leu	Phe	Val	Ala	Asn	Asp	Lys	Lys	Thr	Ser	Phe	Ile	Glu	Asn	Arg
	290					295					300				

Ala 305	Leu	Ser	Gly	Gly	Ala 310	Ile	Ala	Ala	Ser	Ser 315	Asp	Ile	Ala	Phe	Gln 320
Asn	Cys	Ala	Glu	Leu 325	Val	Phe	Lys	Gly	Asn 330	Cys	Ala	Ile	Gly	Thr 335	Glu
Asp	Lys	Gly	Ser 340	Leu	Gly	Gly	Gly	Ala 345	Ile	Ser	Ser	Leu	Gly	Thr	Val
Leu	Leu	Gln 355	Gly	Asn	His	Gly	Ile 360	Thr	Cys	Asp	Lys	Asn 365	Glu	Ser	Ala
Ser	Gln 370	Gly	Gly	Ala	Ile	Phe 375	Gly	Lys	Asn	Cys	Gln 380	Ile	Ser	Asp	Asn
Glu 385	Gly	Pro	Val	Val	Phe 390	Arg	Asp	Ser	Thr	Ala 395	Cys	Leu	Gly	Gly	Gly 400
Ala	Ile	Ala	Ala	Gln 405	Glu	Ile	Val	Ser	Ile 410	Gln	Asn	Asn	Gln	Ala 415	Gly
Ile	Ser	Phe	Glu 420	Gly	Gly	Lys	Ala	Ser 425	Phe	Gly	Gly	Gly	Ile 430	Ala	Cys
Gly	Ser	Phe 435	Ser	Ser	Ala	Gly	Gly 440	Ala	Ser	Val	Leu	Gly 445	Thr	Ile	Asp
Ile	Ser 450	Lys	Asn	Leu	Gly	Ala 455	Ile	Ser	Phe	Ser	Arg 460	Thr	Leu	Cys	Thr
Thr 465	Ser	Asp	Leu	Gly	Gln 470	Met	Glu	Tyr	Gln	Gly 475	Gly	Gly	Ala	Leu	Phe 480
Gly	Glu	Asn	Ile	Ser 485	Leu	Ser	Glu	Asn	Ala 490	Gly	Val	Leu	Thr	Phe 495	Lys
Asp	Asn	Ile	Val 500	Lys	Thr	Phe	Ala	Ser 505	Asn	Gly	Lys	Ile	Leu 510	Gly	Gly
Gly	Ala	Ile 515	Leu	Ala	Thr	Gly	Lys 520	Val	Glu	Ile	Thr	Asn 525	Asn	Ser	Glu
Gly	Ile 530	Ser	Phe	Thr	Gly	Asn 535	Ala	Arg	Ala	Pro	Gln 540	Ala	Leu	Pro	Thr
Gln 545	Glu	Glu	Phe	Pro	Leu 550	Phe	Ser	Lys	Lys	Glu 555	Gly	Arg	Pro	Leu	Ser 560
Ser	Gly	Tyr	Ser	Gly 565	Gly	Gly	Ala	Ile	Leu 570	Gly	Arg	Glu	Val	Ala 575	Ile
Leu	His	Asn	Ala 580	Ala	Val	Val	Phe	Glu 585	Gln	Asn	Arg	Leu	Gln 590	Cys	Ser
Glu	Glu	Glu 595	Ala	Thr	Leu	Leu	Gly 600	Cys	Cys	Gly	Gly	Gly 605	Ala	Val	His
Gly	Met 610	Asp	Ser	Thr	Ser	Ile 615	Val	Gly	Asn	Ser	Ser 620	Val	Arg	Phe	Gly
Asn 625	Asn	Tyr	Ala	Met	Gly 630	Gln	Gly	Val	Ser	Gly 635	Gly	Ala	Leu	Leu	Ser 640
Lys	Thr	Val	Gln 645	Leu	Ala	Gly	Asn	Gly	Ser 650	Val	Asp	Phe	Ser	Arg 655	Asn
Ile	Ala	Ser	Leu 660	Gly	Gly	Gly	Ala	Leu 665	Gln	Ala	Ser	Glu	Gly 670	Asn	Cys
Glu	Leu	Val 675	Asp	Asn	Gly	Tyr	Val 680	Leu	Phe	Arg	Asp	Asn 685	Arg	Gly	Arg
Val	Tyr 690	Gly	Gly	Ala	Ile	Ser 695	Cys	Leu	Arg	Gly	Asp 700	Val	Val	Ile	Ser
Gly 705	Asn	Lys	Gly	Arg	Val 710	Glu	Phe	Lys	Asp	Asn 715	Ile	Ala	Thr	Arg	Leu 720
Tyr	Val	Glu	Glu	Thr 725	Val	Glu	Lys	Val	Glu 730	Glu	Val	Glu	Pro	Ala 735	Pro
Glu	Gln	Lys	Asp 740	Asn	Asn	Glu	Leu	Ser 745	Phe	Leu	Gly	Arg	Ala 750	Glu	Gln
Ser	Phe	Ile	Thr	Ala	Ala	Asn	Gln	Ala	Leu	Phe	Ala	Ser	Glu	Asp	Gly

755 760 765
 Asp Leu Ser Pro Glu Ser Ser Ile Ser Ser Glu Glu Leu Ala Lys Arg
 770 775 780
 Arg Glu Cys Ala Gly Gly Ala Ile Phe Ala Lys Arg Val Arg Ile Val
 785 790 795 800
 Asp Asn Gln Glu Ala Val Val Phe Ser Asn Phe Ser Asp Ile Tyr
 805 810 815
 Gly Gly Ala Ile Phe Thr Gly Ser Leu Arg Glu Glu Asp Lys Leu Asp
 820 825 830
 Gly Gln Ile Pro Glu Val Leu Ile Ser Gly Asn Ala Gly Asp Val Val
 835 840 845
 Phe Ser Gly Asn Ser Ser Lys Arg Asp Glu His Leu Pro His Thr Gly
 850 855 860
 Gly Gly Ala Ile Cys Thr Gln Asn Leu Thr Ile Ser Gln Asn Thr Gly
 865 870 875 880
 Asn Val Leu Phe Tyr Asn Asn Val Ala Cys Ser Gly Gly Ala Val Arg
 885 890 895
 Ile Glu Asp His Gly Asn Val Leu Leu Glu Ala Phe Gly Gly Asp Ile
 900 905 910
 Val Phe Lys Gly Asn Ser Ser Phe Arg Ala Gln Gly Ser Asp Ala Ile
 915 920 925
 Tyr Phe Ala Gly Lys Glu Ser His Ile Thr Ala Leu Asn Ala Thr Glu
 930 935 940
 Gly His Ala Ile Val Phe His Asp Ala Leu Val Phe Glu Asn Leu Glu
 945 950 955 960
 Glu Arg Lys Ser Ala Glu Val Leu Leu Ile Asn Ser Arg Glu Asn Pro
 965 970 975
 Gly Tyr Thr Gly Ser Ile Arg Phe Leu Glu Ala Glu Ser Lys Val Pro
 980 985 990
 Gln Cys Ile His Val Gln Gln Gly Ser Leu Glu Leu Leu Asn Gly Ala
 995 1000 1005
 Thr Leu Cys Ser Tyr Gly Phe Lys Gln Asp Ala Gly Ala Lys Leu Val
 1010 1015 1020
 Leu Ala Ala Gly Ala Lys Leu Lys Ile Leu Asp Ser Gly Thr Pro Val
 1025 1030 1035 1040
 Gln Gln Gly His Ala Ile Ser Lys Pro Glu Ala Glu Ile Glu Ser Ser
 1045 1050 1055
 Ser Glu Pro Glu Gly Ala His Ser Leu Trp Ile Ala Lys Asn Ala Gln
 1060 1065 1070
 Thr Thr Val Pro Met Val Asp Ile His Thr Ile Ser Val Asp Leu Ala
 1075 1080 1085
 Ser Phe Ser Ser Ser Gln Gln Glu Gly Thr Val Glu Ala Pro Gln Val
 1090 1095 1100
 Ile Val Pro Gly Gly Ser Tyr Val Arg Ser Gly Glu Leu Asn Leu Glu
 1105 1110 1115 1120
 Leu Val Asn Thr Thr Gly Thr Gly Tyr Glu Asn His Ala Leu Leu Lys
 1125 1130 1135
 Asn Glu Ala Lys Val Pro Leu Met Ser Phe Val Ala Ser Gly Asp Glu
 1140 1145 1150
 Ala Ser Ala Glu Ile Ser Asn Leu Ser Val Ser Asp Leu Gln Ile His
 1155 1160 1165
 Val Val Thr Pro Glu Ile Glu Glu Asp Thr Tyr Gly His Met Gly Asp
 1170 1175 1180
 Trp Ser Glu Ala Lys Ile Gln Asp Gly Thr Leu Val Ile Ser Trp Asn
 1185 1190 1195 1200
 Pro Thr Gly Tyr Arg Leu Asp Pro Gln Lys Ala Gly Ala Leu Val Phe
 1205 1210 1215

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Asn Ala Leu Trp Glu Glu Gly Ala Val Leu Ser Ala Leu Lys Asn Ala
 1220 1225 1230
 Arg Phe Ala His Asn Leu Thr Ala Gln Arg Met Glu Phe Asp Tyr Ser
 1235 1240 1245
 Thr Asn Val Trp Gly Phe Ala Phe Gly Gly Phe Arg Thr Leu Ser Ala
 1250 1255 1260
 Glu Asn Leu Val Ala Ile Asp Gly Tyr Lys Gly Ala Tyr Gly Gly Ala
 1265 1270 1275 1280
 Ser Ala Gly Val Asp Ile Gln Leu Met Glu Asp Phe Val Leu Gly Val
 1285 1290 1295
 Ser Gly Ala Ala Phe Leu Gly Lys Met Asp Ser Gln Lys Phe Asp Ala
 1300 1305 1310
 Glu Val Ser Arg Lys Gly Val Val Gly Ser Val Tyr Thr Gly Phe Leu
 1315 1320 1325
 Ala Gly Ser Trp Phe Phe Lys Gly Gln Tyr Ser Leu Gly Glu Thr Gln
 1330 1335 1340
 Asn Asp Met Lys Thr Arg Tyr Gly Val Leu Gly Glu Ser Ser Ala Ser
 1345 1350 1355 1360
 Trp Thr Ser Arg Gly Val Leu Ala Asp Ala Leu Val Glu Tyr Arg Ser
 1365 1370 1375
 Leu Val Gly Pro Val Arg Pro Thr Phe Tyr Ala Leu His Phe Asn Pro
 1380 1385 1390
 Tyr Val Glu Val Ser Tyr Ala Ser Met Lys Phe Pro Gly Phe Thr Glu
 1395 1400 1405
 Gln Gly Arg Glu Ala Arg Ser Phe Glu Asp Ala Ser Leu Thr Asn Ile
 1410 1415 1420
 Thr Ile Pro Leu Gly Met Lys Phe Glu Leu Ala Phe Ile Lys Gly Gln
 1425 1430 1435 1440
 Phe Ser Glu Val Asn Ser Leu Gly Ile Ser Tyr Ala Trp Glu Ala Tyr
 1445 1450 1455
 Arg Lys Val Glu Gly Gly Ala Val Gln Leu Leu Glu Ala Gly Phe Asp
 1460 1465 1470
 Trp Glu Gly Ala Pro Met Asp Leu Pro Arg Gln Glu Leu Arg Val Ala
 1475 1480 1485
 Leu Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe Ser Thr Val Leu Gly
 1490 1495 1500
 Leu Thr Ala Phe Cys Gly Gly Phe Thr Ser Thr Asp Ser Lys Leu Gly
 1505 1510 1515 1520
 Tyr Glu Ala Asn Thr Gly Leu Arg Leu Ile Phe
 1525 1530

<210> 99
 <211> 474
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 99
 Met Lys Ile Ile His Thr Ala Ile Glu Phe Ala Pro Val Ile Lys Ala
 5 10 15
 Gly Gly Leu Gly Asp Ala Leu Tyr Gly Leu Ala Lys Ala Leu Ala Ala
 20 25 30
 Asn His Thr Thr Glu Val Val Ile Pro Leu Tyr Pro Lys Leu Phe Thr
 35 40 45
 Leu Pro Lys Glu Gln Asp Leu Cys Ser Ile Gln Lys Leu Ser Tyr Phe
 50 55 60
 Phe Ala Gly Glu Gln Glu Ala Thr Ala Phe Ser Tyr Phe Tyr Glu Gly

65	Ile	Lys	Val	Thr	Leu	Phe	Lys	Leu	Asp	Thr	Gln	Pro	Glu	Leu	Phe	Glu	80
					85					90						95	
	Asn	Ala	Glu	Thr	Ile	Tyr	Thr	Ser	Asp	Asp	Ala	Phe	Arg	Phe	Cys	Ala	
			100						105					110			
	Phe	Ser	Ala	Ala	Ala	Ser	Tyr	Ile	Gln	Lys	Glu	Gly	Ala	Asn	Ile		
			115					120				125					
	Val	His	Leu	His	Asp	Trp	His	Thr	Gly	Leu	Val	Ala	Gly	Leu	Leu	Lys	
			130				135					140					
	Gln	Gln	Pro	Cys	Ser	Gln	Leu	Gln	Lys	Ile	Val	Leu	Thr	Leu	His	Asn	
						150					155					160	
	Phe	Gly	Tyr	Arg	Gly	Tyr	Thr	Thr	Arg	Glu	Ile	Leu	Glu	Ala	Ser	Ser	
					165					170						175	
	Leu	Asn	Glu	Phe	Tyr	Ile	Ser	Gln	Tyr	Gln	Leu	Phe	Arg	Asp	Pro	Gln	
				180					185					190			
	Thr	Cys	Val	Leu	Leu	Lys	Gly	Ala	Leu	Tyr	Cys	Ser	Asp	Phe	Val	Thr	
			195					200					205				
	Thr	Val	Ser	Pro	Thr	Tyr	Ala	Lys	Glu	Ile	Leu	Glu	Asp	Tyr	Ser	Asp	
							215					220					
	Tyr	Glu	Ile	His	Asp	Ala	Ile	Thr	Ala	Arg	Gln	His	His	Leu	Arg	Gly	
						230					235					240	
	Ile	Leu	Asn	Gly	Ile	Asp	Thr	Thr	Ile	Trp	Gly	Pro	Glu	Thr	Asp	Pro	
					245					250						255	
	Asn	Leu	Ala	Lys	Asn	Tyr	Thr	Lys	Glu	Leu	Phe	Glu	Thr	Pro	Ser	Ile	
				260					265					270			
	Phe	Phe	Glu	Ala	Lys	Ala	Glu	Asn	Lys	Lys	Ala	Leu	Tyr	Glu	Arg	Leu	
			275					280					285				
	Gly	Leu	Ser	Leu	Glu	His	Ser	Pro	Cys	Val	Cys	Ile	Ile	Ser	Arg	Ile	
			290				295					300					
	Ala	Glu	Gln	Lys	Gly	Pro	His	Phe	Met	Lys	Gln	Ala	Ile	Leu	His	Ala	
						310					315					320	
	Leu	Glu	Asn	Ala	Tyr	Thr	Leu	Ile	Ile	Gly	Thr	Cys	Tyr	Gly	Asn		
					325					330				335			
	Gln	Leu	His	Glu	Glu	Phe	Ala	Asn	Leu	Gln	Glu	Ser	Leu	Ala	Asn	Ser	
								345						350			
	Pro	Asp	Val	Arg	Ile	Leu	Leu	Thr	Tyr	Ser	Asp	Val	Leu	Ala	Arg	Gln	
								360					365				
	Ile	Phe	Ala	Ala	Ala	Asp	Met	Ile	Cys	Ile	Pro	Ser	Met	Phe	Glu	Pro	
							375					380					
	Cys	Gly	Leu	Thr	Gln	Met	Ile	Gly	Met	Arg	Tyr	Gly	Thr	Val	Pro	Leu	
						390					395					400	
	Val	Arg	Ala	Thr	Gly	Gly	Leu	Ala	Asp	Thr	Val	Ala	Asn	Gly	Ile	Asn	
					405					410					415		
	Gly	Phe	Ser	Phe	Phe	Asn	Pro	His	Asp	Phe	Tyr	Glu	Phe	Arg	Asn	Met	
									425					430			
	Leu	Ser	Glu	Ala	Val	Thr	Thr	Tyr	Arg	Thr	Asn	His	Asp	Lys	Trp	Gln	
								440					445				
	His	Ile	Val	Arg	Ala	Cys	Leu	Asp	Phe	Ser	Ser	Asp	Leu	Glu	Thr	Ala	
							455					460					
	Ala	Asn	Lys	Tyr	Leu	Glu	Ile	Tyr	Lys	Gln							
							470										

<210> 100

<211> 393

<212> PRT

<213> Chlamydia trachomatis serovar D

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<400> 100

Met Lys Lys Leu Leu Lys Ser Val Leu Val Phe Ala Ala Leu Ser Ser
5 10 15
Ala Ser Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ala Glu Pro Ser
20 25 30
Leu Met Ile Asp Gly Ile Leu Trp Glu Gly Phe Gly Gly Asp Pro Cys
35 40 45
Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Met Arg Val Gly Tyr
50 55 60
Tyr Gly Asp Phe Val Phe Asp Arg Val Leu Lys Thr Asp Val Asn Lys
65 70 75 80
Glu Phe Gln Met Gly Ala Lys Pro Thr Thr Asp Thr Gly Asn Ser Ala
85 90 95
Ala Pro Ser Thr Leu Thr Ala Arg Glu Asn Pro Ala Tyr Gly Arg His
100 105 110
Met Gln Asp Ala Glu Met Phe Thr Asn Ala Ala Cys Met Ala Leu Asn
115 120 125
Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Thr Ser Gly
130 135 140
Tyr Leu Lys Gly Asn Ser Ala Ser Phe Asn Leu Val Gly Leu Phe Gly
145 150 155 160
Asp Asn Glu Asn Gln Lys Thr Val Lys Ala Glu Ser Val Pro Asn Met
165 170 175
Ser Phe Asp Gln Ser Val Val Glu Leu Tyr Thr Asp Thr Thr Phe Ala
180 185 190
Trp Ser Val Gly Ala Arg Ala Ala Leu Trp Glu Cys Gly Cys Ala Thr
195 200 205
Leu Gly Ala Ser Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu
210 215 220
Leu Asn Val Leu Cys Asn Ala Ala Glu Phe Thr Ile Asn Lys Pro Lys
225 230 235 240
Gly Tyr Val Gly Lys Glu Phe Pro Leu Asp Leu Thr Ala Gly Thr Asp
245 250 255
Ala Ala Thr Gly Thr Lys Asp Ala Ser Ile Asp Tyr His Glu Trp Gln
260 265 270
Ala Ser Leu Ala Leu Ser Tyr Arg Leu Asn Met Phe Thr Pro Tyr Ile
275 280 285
Gly Val Lys Trp Ser Arg Ala Ser Phe Asp Ala Asp Thr Ile Arg Ile
290 295 300
Ala Gln Pro Lys Ser Ala Thr Ala Ile Phe Asp Thr Thr Thr Leu Asn
305 310 315 320
Pro Thr Ile Ala Gly Ala Gly Asp Val Lys Thr Gly Ala Glu Gly Gln
325 330 335
Leu Gly Asp Thr Met Gln Ile Val Ser Leu Gln Leu Asn Lys Met Lys
340 345 350
Ser Arg Lys Ser Cys Gly Ile Ala Val Gly Thr Thr Ile Val Asp Ala
355 360 365
Asp Lys Tyr Ala Val Thr Val Glu Thr Arg Leu Ile Asp Glu Arg Ala
370 375 380
Ala His Val Asn Ala Gln Phe Arg Phe
385 390

<210> 101

<211> 195

<212> PRT

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<213> Chlamydia trachomatis serovar D

<400> 101

Met	Gly	Ser	Leu	Val	Gly	Arg	Gln	Ala	Pro	Asp	Phe	Ser	Gly	Lys	Ala
				5					10					15	
Val	Val	Cys	Gly	Glu	Glu	Lys	Glu	Ile	Ser	Leu	Ala	Asp	Phe	Arg	Gly
			20				25					30			
Lys	Tyr	Val	Val	Leu	Phe	Phe	Tyr	Pro	Lys	Asp	Phe	Thr	Tyr	Val	Cys
		35					40					45			
Pro	Thr	Glu	Leu	His	Ala	Phe	Gln	Asp	Arg	Leu	Val	Asp	Phe	Glu	Glu
		50				55					60				
Arg	Gly	Ala	Val	Val	Leu	Gly	Cys	Ser	Val	Asp	Asp	Ile	Glu	Thr	His
		65			70					75					80
Ser	Arg	Trp	Leu	Ala	Val	Ala	Arg	Asn	Ala	Gly	Gly	Ile	Glu	Gly	Thr
			85					90						95	
Glu	Tyr	Pro	Leu	Leu	Ala	Asp	Pro	Ser	Phe	Lys	Ile	Ser	Glu	Ala	Phe
			100					105					110		
Gly	Val	Leu	Asn	Pro	Glu	Gly	Ser	Leu	Ala	Leu	Arg	Ala	Thr	Phe	Leu
		115					120					125			
Ile	Asp	Lys	Tyr	Gly	Val	Val	Arg	His	Ala	Val	Ile	Asn	Asp	Leu	Pro
	130					135					140				
Leu	Gly	Arg	Ser	Ile	Asp	Glu	Glu	Leu	Arg	Ile	Leu	Asp	Ser	Leu	Ile
	145				150					155					160
Phe	Phe	Glu	Asn	His	Gly	Met	Val	Cys	Pro	Ala	Asn	Trp	Arg	Ser	Gly
			165					170						175	
Glu	Arg	Gly	Met	Val	Pro	Ser	Glu	Glu	Gly	Leu	Lys	Glu	Tyr	Phe	Gln
			180					185					190		
Thr	Met	Asp													
		195													

<210> 102

<211> 86

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 102

Met	Ser	Gln	Asn	Lys	Asn	Ser	Ala	Phe	Met	Gln	Pro	Val	Asn	Val	Ser
				5					10					15	
Ala	Asp	Leu	Ala	Ala	Ile	Val	Gly	Ala	Gly	Pro	Met	Pro	Arg	Thr	Glu
		20					25					30			
Ile	Ile	Lys	Lys	Met	Trp	Asp	Tyr	Ile	Lys	Lys	Asn	Gly	Leu	Gln	Asp
		35				40						45			
Pro	Thr	Asn	Lys	Arg	Asn	Ile	Asn	Pro	Asp	Asp	Lys	Leu	Ala	Lys	Val
	50				55						60				
Phe	Gly	Thr	Glu	Lys	Pro	Ile	Asp	Met	Phe	Gln	Met	Thr	Lys	Met	Val
	65				70				75						80
Ser	Gln	His	Ile	Ile	Lys										
				85											

<210> 103

<211> 394

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 103

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Asp Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Ala Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Ile Asp Met Ile Ser Glu Glu
 130 135 140
 Asp Ala Glu Leu Val Asp Leu Val Glu Met Glu Leu Val Glu Leu Leu
 145 150 155 160
 Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
 165 170 175
 Lys Ala Leu Glu Gly Asp Ala Ala Tyr Ile Glu Lys Val Arg Glu Leu
 180 185 190
 Met Gln Ala Val Asp Asp Asn Ile Pro Thr Pro Glu Arg Glu Ile Asp
 195 200 205
 Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
 210 215 220
 Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
 225 230 235 240
 Asp Lys Val Gln Leu Val Gly Leu Arg Asp Thr Lys Glu Thr Ile Val
 245 250 255
 Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
 260 265 270
 Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
 275 280 285
 Arg Gly Met Val Val Cys Leu Pro Asn Ser Val Lys Pro His Thr Gln
 290 295 300
 Phe Lys Cys Ala Val Tyr Val Leu Gln Lys Glu Gly Gly Arg His
 305 310 315 320
 Lys Pro Phe Phe Thr Gly Tyr Arg Pro Gln Phe Phe Arg Thr Thr
 325 330 335
 Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Ile Glu Met Val Met
 340 345 350
 Pro Gly Asp Asn Val Glu Phe Glu Val Gln Leu Ile Ser Pro Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Ile Ala
 385 390

<210> 104

<211> 82

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 104

Met Gly Gln Asp His Arg Arg Lys Phe Leu Lys Lys Val Ser Phe Val
 5 10 15
 Lys Lys Gln Ala Ala Phe Ala Gly Asn Phe Ile Glu Glu Ile Lys Lys
 20 25 30
 Ile Glu Trp Val Asn Lys Arg Asp Leu Lys Arg Tyr Val Lys Ile Val
 35 40 45
 Leu Met Asn Ile Phe Gly Phe Gly Phe Ser Ile Tyr Cys Val Asp Leu
 50 55 60
 Ala Leu Arg Lys Ser Leu Ser Leu Phe Gly Lys Val Thr Ser Phe Phe
 65 70 75 80
 Phe Gly

<210> 105

<211> 379

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 105

Met Val Ile Pro Lys Val Asp Leu Gly Glu Ser Ala Val Met Met Gly
 5 10 15
 Tyr Lys Leu Thr Ser Gln Leu Ala Met Leu Ser Ile Leu Leu Thr Phe
 20 25 30
 Thr His Thr Met Gly His Ala Ser Gln Met Ser Gln Thr Leu Pro Thr
 35 40 45
 Ile Ile Glu Ala Gln Ala Glu Glu Ala Leu Gln Ala Asp Arg Gly Val
 50 55 60
 Ala Gly Gln Ala Leu Lys Lys Leu Arg Lys Lys Arg Cys Ala Ser Arg
 65 70 75 80
 Lys Ser Ala Cys Lys Ala Ser Phe Lys Lys Lys Asp Phe Phe Ser Cys
 85 90 95
 Ile Thr Asn Gly Leu Phe Ser Gly Asn His Glu Gln Arg Leu Thr Ala
 100 105 110
 Lys Lys Glu Asn Lys Ala Arg Gly Lys Glu Pro Arg Val Val Val Gln
 115 120 125
 Thr Thr Lys Lys Arg Gln Ile Thr Gln Ser Glu Lys Glu Phe Phe Asp
 130 135 140
 Trp Leu Cys Asn Ser Lys Arg Glu Arg Lys Leu Leu Lys Lys Lys Pro
 145 150 155 160
 Val Asn Thr Ser Leu Ala Lys Ser Glu Glu Leu Ser Pro Lys Glu Ala
 165 170 175
 Ala Ile Ala Ala Ala Arg Ala Ser Leu Ser Pro Glu Glu Lys Arg Gln
 180 185 190
 Leu Ile Arg Glu Trp Leu Ala Glu Lys Thr Ala Arg Lys Ser Gly
 195 200 205
 Arg Ala Ala Cys Ala Val Ser Glu Asn Leu Lys Arg Asp Gly Ser Ile
 210 215 220
 Thr Ser Thr Leu Arg Tyr Asp Ala Glu Lys Ala Leu Thr Thr Arg Val
 225 230 235 240
 Lys Arg Asn Glu Asn Ser Val Asn Ala Arg Ala Arg Gln Arg Ala Ala
 245 250 255
 Leu Gln Lys Ala Lys Lys Ala Lys Thr Glu Lys Pro Glu Ala Asp Glu
 260 265 270
 Lys Ala Ala Glu Ala Val Ala Ala Pro Thr Lys Gln Ala His Lys
 275 280 285

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Glu Pro Glu Asn Tyr Phe Ala Ala Thr Ala Ser Thr Asn Asn Thr Asn
 290 295 300
 Val Met Ser Tyr Leu Asn Ala His Gln Tyr Arg Cys Asp Ser Ser Glu
 305 310 315 320
 Thr Asp Trp Pro Cys Ser Ser Cys Val Thr Lys Arg Arg Ala Asn Phe
 325 330 335
 Gly Ile Ser Val Cys Thr Met Val Val Thr Val Ile Ala Met Ile Val
 340 345 350
 Gly Ala Val Ile Ile Ser Asn Ala Thr Asp Ser Thr Val Ala Gly Ser
 355 360 365
 Ser Gly Thr Gly Gly Gly Gly Ser Thr Gln Pro
 370 375

<210> 106
 <211> 563
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 106
 Met Val Tyr Phe Arg Ala His Gln Pro Arg His Thr Pro Lys Thr Phe
 5 10 15
 Pro Leu Glu Val His His Ser Phe Ser Asp Lys His Pro Gln Ile Ala
 20 25 30
 Lys Ala Met Arg Ile Thr Gly Ile Ala Leu Ala Ala Leu Ser Leu Leu
 35 40 45
 Ala Val Val Ala Cys Val Ile Ala Val Ser Ala Gly Gly Ala Ala Ile
 50 55 60
 Pro Leu Ala Val Ile Ser Gly Ile Ala Val Met Ser Gly Leu Leu Ser
 65 70 75 80
 Ala Ala Thr Ile Ile Cys Ser Ala Lys Lys Ala Leu Ala Gln Arg Lys
 85 90 95
 Gln Lys Gln Leu Glu Glu Ser Leu Pro Leu Asp Asn Ala Thr Glu His
 100 105 110
 Val Ser Tyr Leu Thr Ser Asp Thr Ser Tyr Phe Asn Gln Trp Glu Ser
 115 120 125
 Leu Gly Ala Leu Asn Lys Gln Leu Ser Gln Ile Asp Leu Thr Ile Gln
 130 135 140
 Ala Pro Glu Lys Lys Leu Leu Lys Glu Val Leu Gly Ser Arg Tyr Asp
 145 150 155 160
 Ser Ile Asn His Ser Ile Glu Glu Ile Ser Asp Arg Phe Thr Lys Met
 165 170 175
 Leu Ser Leu Leu Arg Leu Arg Glu His Phe Tyr Arg Gly Glu Glu Arg
 180 185 190
 Tyr Ala Pro Tyr Leu Ser Pro Pro Leu Leu Asn Lys Asn Arg Leu Leu
 195 200 205
 Thr Gln Ile Thr Ser Asn Met Ile Arg Met Leu Pro Lys Ser Gly Gly
 210 215 220
 Val Phe Ser Leu Lys Ala Asn Thr Leu Ser His Ala Ser Arg Thr Leu
 225 230 235 240
 Tyr Thr Val Leu Lys Val Ala Leu Ser Leu Gly Val Leu Ala Gly Val
 245 250 255
 Ala Ala Leu Ile Ile Phe Leu Pro Pro Ser Leu Pro Phe Ile Ala Val
 260 265 270
 Ile Gly Val Ser Ser Leu Ala Leu Gly Met Ala Ser Phe Leu Met Ile
 275 280 285
 Arg Gly Ile Lys Tyr Leu Leu Glu His Ser Pro Leu Asn Arg Lys Gln

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290 295 300
 Leu Ala Lys Asp Ile Gln Lys Thr Ile Gly Pro Asp Val Leu Ala Ser
 305 310 315 320
 Met Val His Tyr Gln His Gln Leu Leu Ser His Leu His Glu Thr Leu
 325 330 335
 Leu Asp Glu Ala Ile Thr Ala Arg Trp Ser Glu Pro Phe Phe Ile Glu
 340 345 350
 His Ala Asn Leu Lys Ala Lys Ile Glu Asp Leu Thr Lys Gln Tyr Asp
 355 360 365
 Ile Leu Asn Ala Ala Phe Asn Lys Ser Leu Gln Gln Asp Glu Ala Leu
 370 375 380
 Arg Ser Gln Leu Glu Lys Arg Ala Tyr Leu Phe Pro Ile Pro Asn Asn
 385 390 395 400
 Asp Glu Asn Ala Lys Thr Lys Glu Ser Gln Leu Leu Asp Ser Glu Asn
 405 410 415
 Asp Ser Asn Ser Glu Phe Gln Glu Ile Ile Asn Lys Gly Leu Glu Ala
 420 425 430
 Ala Asn Lys Arg Arg Ala Asp Ala Lys Ser Lys Phe Tyr Thr Glu Asp
 435 440 445
 Glu Thr Ser Asp Lys Ile Phe Ser Ile Trp Lys Pro Thr Lys Asn Leu
 450 455 460
 Ala Leu Glu Asp Leu Trp Arg Val His Glu Ala Cys Asn Glu Glu Gln
 465 470 475 480
 Gln Ala Leu Leu Leu Glu Asp Tyr Met Ser Tyr Lys Thr Ser Glu Cys
 485 490 495
 Gln Ala Ala Leu Gln Lys Val Ser Gln Glu Leu Lys Ala Ala Gln Lys
 500 505 510
 Ser Phe Ala Val Leu Glu Lys His Ala Leu Asp Arg Ser Tyr Glu Ser
 515 520 525
 Ser Val Ala Thr Met Asp Leu Ala Arg Ala Asn Gln Glu Thr His Arg
 530 535 540
 Leu Leu Asn Ile Leu Ser Glu Leu Gln Gln Leu Ala Gln Tyr Leu Leu
 545 550 555 560
 Asp Asn His

<210> 107

<211> 358

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 107

Met Arg Lys Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
 5 10 15
 Val Val Ala Tyr Leu Leu Lys Lys Gln Gly Glu Tyr Asn Val Val Gly
 20 25 30
 Leu Phe Met Lys Asn Trp Gly Glu Gln Asp Glu Asn Gly Glu Cys Thr
 35 40 45
 Ala Thr Lys Asp Phe Arg Asp Val Glu Arg Ile Ala Glu Gln Leu Ser
 50 55 60
 Ile Pro Tyr Tyr Thr Val Ser Phe Ser Lys Glu Tyr Lys Glu Arg Val
 65 70 75 80
 Phe Ser Arg Phe Leu Arg Glu Tyr Ala Asn Gly Tyr Thr Pro Asn Pro
 85 90 95
 Asp Val Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
 100 105 110

Val Arg Glu Leu Lys Gly Asp Phe Leu Ala Thr Gly His Tyr Cys Arg
 115 120 125
 Gly Gly Ala Asp Gly Thr Gly Leu Ser Arg Gly Ile Asp Pro Asn Lys
 130 135 140
 Asp Gln Ser Tyr Phe Leu Cys Gly Thr Pro Lys Asp Ala Leu Ser Asn
 145 150 155 160
 Val Leu Phe Pro Leu Gly Gly Met Tyr Lys Thr Glu Val Arg Arg Ile
 165 170 175
 Ala Gln Glu Ala Gly Leu Ala Thr Ala Thr Lys Lys Asp Ser Thr Gly
 180 185 190
 Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Ser Phe Leu Glu Gln Phe
 195 200 205
 Val Ala Asp Ser Pro Gly Asp Ile Ile Asp Phe Asp Thr Gln Gln Val
 210 215 220
 Val Gly Arg His Glu Gly Ala His Tyr Tyr Thr Ile Gly Gln Arg Arg
 225 230 235 240
 Gly Leu Asn Ile Gly Gly Met Glu Lys Pro Cys Tyr Val Leu Ser Lys
 245 250 255
 Asn Met Glu Lys Asn Ile Val Tyr Ile Val Arg Gly Glu Asp His Pro
 260 265 270
 Leu Leu Tyr Arg Gln Glu Leu Leu Ala Lys Glu Leu Asn Trp Phe Val
 275 280 285
 Pro Leu Gln Glu Pro Met Ile Cys Ser Ala Lys Val Arg Tyr Arg Ser
 290 295 300
 Pro Asp Glu Lys Cys Ser Val Tyr Pro Leu Glu Asp Gly Thr Val Lys
 305 310 315 320
 Val Ile Phe Asp Val Pro Val Lys Ala Val Thr Pro Gly Gln Thr Val
 325 330 335
 Ala Phe Tyr Gln Gly Asp Ile Cys Leu Gly Gly Gly Val Ile Glu Val
 340 345 350
 Pro Met Ile His Gln Leu
 355

<210> 108

<211> 267

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 108

Met Ser Arg Lys Pro Ala Ser Asn Ser Ser Arg Asn Thr Lys Arg Ser
 5 10 15
 Ser Asp Thr Ser Trp Glu Val Ile Ala Gln Asp Tyr Asn Lys Ala Val
 20 25 30
 Asp Arg Asp Gly His Phe Tyr His Lys Glu Val Ile Leu Pro Asn Leu
 35 40 45
 Leu Ser Lys Leu His Ile Ser Arg Ser Ser Ser Leu Val Asp Val Gly
 50 55 60
 Cys Gly Gln Gly Ile Leu Glu Lys His Leu Pro Lys His Leu Pro Tyr
 65 70 75 80
 Leu Gly Ile Asp Leu Ser Pro Ser Leu Leu Arg Phe Ala Lys Lys Ser
 85 90 95
 Ala Ser Ser Lys Ser Arg Arg Phe Leu His His Asp Met Thr Gln Pro
 100 105 110
 Val Pro Ala Asp His His Glu Gln Phe Ser His Ala Thr Ala Ile Leu
 115 120 125
 Ser Leu Gln Asn Met Glu Ser Pro Glu Gln Ala Ile Ala His Thr Ala

10007693-120501

130 135 140
 Asn Leu Leu Ala Pro Gln Gly Arg Leu Phe Ile Val Leu Asn His Pro
 145 150 155 160
 Cys Phe Arg Ile Pro Arg Leu Ser Ser Trp Leu Tyr Asp Glu Pro Lys
 165 170 175
 Lys Leu Leu Ser Arg Lys Ile Asp Arg Tyr Leu Ser Pro Val Ala Val
 180 185 190
 Pro Ile Val Val His Pro Gly Glu Lys His Ser Glu Thr Thr Tyr Ser
 195 200 205
 Phe His Phe Pro Leu Ser Tyr Trp Val Gln Ala Leu Ser Asn His Asn
 210 215 220
 Leu Leu Ile Asp Ser Met Glu Glu Trp Ile Ser Pro Lys Lys Ser Ser
 225 230 235 240
 Gly Lys Arg Ala Arg Ala Glu Asn Leu Cys Arg Lys Glu Phe Pro Leu
 245 250 255
 Phe Leu Phe Ile Ser Ala Leu Lys Ile Ser Lys
 260 265

<210> 109

<211> 867

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 109

Met Glu Lys Phe Ser Asp Ala Val Ser Glu Ala Leu Glu Lys Ala Phe
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 Glu Leu Ala Lys Asn Ser Lys His Ser Tyr Val Thr Glu Asn His Leu
 20 25 30
 Leu Lys Ser Leu Leu Gln Asn Pro Gly Ser Leu Phe Cys Leu Val Ile
 35 40 45
 Lys Asp Val His Gly Asn Leu Gly Leu Leu Thr Ser Ala Val Asp Asp
 50 55 60
 Ala Leu Arg Arg Glu Pro Thr Val Val Glu Gly Thr Ala Val Ala Ser
 65 70 75 80
 Pro Ser Pro Ser Leu Gln Gln Leu Leu Leu Asn Ala His Gln Glu Ala
 85 90 95
 Arg Ser Met Gly Asp Glu Tyr Leu Ser Gly Asp His Leu Leu Leu Ala
 100 105 110
 Phe Trp Arg Ser Thr Lys Glu Pro Phe Ala Ser Trp Arg Lys Thr Val
 115 120 125
 Lys Thr Thr Ser Glu Ala Leu Lys Glu Leu Ile Thr Lys Leu Arg Gln
 130 135 140
 Gly Ser Arg Met Asp Ser Pro Ser Ala Glu Glu Asn Leu Lys Gly Leu
 145 150 155 160
 Glu Lys Tyr Cys Lys Asn Leu Thr Val Leu Ala Arg Glu Gly Lys Leu
 165 170 175
 Asp Pro Val Ile Gly Arg Asp Glu Glu Ile Arg Arg Thr Ile Gln Val
 180 185 190
 Leu Ser Arg Arg Thr Lys Asn Asn Pro Met Leu Ile Gly Glu Pro Gly
 195 200 205
 Val Gly Lys Thr Ala Ile Ala Glu Gly Leu Ala Leu Arg Ile Val Gln
 210 215 220
 Gly Asp Val Pro Glu Ser Leu Lys Glu Lys His Leu Tyr Val Leu Asp
 225 230 235 240
 Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr Arg Gly Glu Phe Glu Glu

10007693-10007693

				245					250					255	
Arg	Leu	Lys	Ser	Val	Leu	Lys	Gly	Val	Glu	Ala	Ser	Glu	Gly	Glu	Cys
			260					265					270		
Ile	Leu	Phe	Ile	Asp	Glu	Val	His	Thr	Leu	Val	Gly	Ala	Gly	Ala	Thr
		275					280					285			
Asp	Gly	Ala	Met	Asp	Ala	Ala	Asn	Leu	Leu	Lys	Pro	Ala	Leu	Ala	Arg
	290					295				300					
Gly	Thr	Leu	His	Cys	Ile	Gly	Ala	Thr	Thr	Leu	Asn	Glu	Tyr	Gln	Lys
305					310					315					320
Tyr	Ile	Glu	Lys	Asp	Ala	Ala	Leu	Glu	Arg	Arg	Phe	Gln	Pro	Ile	Phe
				325					330					335	
Val	Thr	Glu	Pro	Ser	Leu	Glu	Asp	Ala	Val	Phe	Ile	Leu	Arg	Gly	Leu
			340					345					350		
Arg	Glu	Lys	Tyr	Glu	Ile	Phe	His	Gly	Val	Arg	Ile	Thr	Glu	Gly	Ala
		355					360					365			
Leu	Asn	Ala	Ala	Val	Val	Leu	Ser	Tyr	Arg	Tyr	Ile	Thr	Asp	Arg	Phe
	370					375					380				
Leu	Pro	Asp	Lys	Ala	Ile	Asp	Leu	Ile	Asp	Glu	Ala	Ala	Ser	Leu	Ile
385					390					395					400
Arg	Met	Gln	Ile	Gly	Ser	Leu	Pro	Leu	Pro	Ile	Asp	Glu	Lys	Glu	Arg
				405					410					415	
Glu	Leu	Ser	Ala	Leu	Ile	Val	Lys	Gln	Glu	Ala	Ile	Lys	Arg	Glu	Gln
			420					425					430		
Ala	Pro	Ala	Tyr	Gln	Glu	Glu	Ala	Glu	Asp	Met	Gln	Lys	Ala	Ile	Asp
		435					440					445			
Arg	Val	Lys	Glu	Glu	Leu	Ala	Ala	Leu	Arg	Leu	Arg	Trp	Asp	Glu	Glu
	450					455					460				
Lys	Gly	Leu	Ile	Thr	Gly	Leu	Lys	Glu	Lys	Lys	Asn	Ala	Leu	Glu	Asn
465					470					475					480
Leu	Lys	Phe	Ala	Glu	Glu	Glu	Ala	Glu	Arg	Thr	Ala	Asp	Tyr	Asn	Arg
			485						490				495		
Val	Ala	Glu	Leu	Arg	Tyr	Ser	Leu	Ile	Pro	Ser	Leu	Glu	Glu	Glu	Ile
			500					505					510		
His	Leu	Ala	Glu	Glu	Ala	Leu	Asn	Gln	Arg	Asp	Gly	Arg	Leu	Leu	Gln
		515					520					525			
Glu	Glu	Val	Asp	Glu	Arg	Leu	Ile	Ala	Gln	Val	Val	Ala	Asn	Trp	Thr
	530					535					540				
Gly	Ile	Pro	Val	Gln	Lys	Met	Leu	Glu	Gly	Glu	Ser	Glu	Lys	Leu	Leu
545					550					555					560
Val	Leu	Glu	Glu	Ser	Leu	Glu	Glu	Arg	Val	Val	Gly	Gln	Pro	Phe	Ala
				565					570					575	
Ile	Ala	Ala	Val	Ser	Asp	Ser	Ile	Arg	Ala	Ala	Arg	Val	Gly	Leu	Ser
			580					585					590		
Asp	Pro	Gln	Arg	Pro	Leu	Gly	Val	Phe	Leu	Phe	Leu	Gly	Pro	Thr	Gly
		595					600					605			
Val	Gly	Lys	Thr	Glu	Leu	Ala	Lys	Ala	Leu	Ala	Glu	Leu	Leu	Phe	Asn
	610					615					620				
Lys	Glu	Glu	Ala	Met	Ile	Arg	Phe	Asp	Met	Thr	Glu	Tyr	Met	Glu	Lys
625					630					635					640
His	Ser	Val	Ser	Lys	Leu	Ile	Gly	Ser	Pro	Pro	Gly	Tyr	Val	Gly	Tyr
				645					650					655	
Glu	Glu	Gly	Gly	Ser	Leu	Ser	Glu	Ala	Leu	Arg	Arg	Arg	Pro	Tyr	Ser
			660					665					670		
Val	Val	Leu	Phe	Asp	Glu	Ile	Glu	Lys	Ala	Asp	Lys	Glu	Val	Phe	Asn
		675					680					685			
Ile	Leu	Leu	Gln	Ile	Phe	Asp	Gly	Ile	Leu	Leu	Thr	Asp	Ser	Lys	Lys
						695					700				

Arg Lys Val Asn Cys Lys Asn Ala Leu Phe Ile Met Thr Ser Asn Ile
 705 710 715 720
 Gly Ser Gln Glu Leu Ala Asp Tyr Cys Thr Lys Lys Gly Thr Ile Val
 725 730 735
 Asp-Lys-Glu-Ala-Val-Leu-Ser-Val-Val-Ala-Pro-Ala-Leu-Lys-Asn-Tyr
 740 745 750
 Phe-Ser-Pro-Glu-Phe-Ile-Asn-Arg-Ile-Asp-Asp-Ile-Leu-Pro-Phe-Val--
 755 760 765
 Pro-Leu-Thr-Thr-Glu-Asp-Ile-Val-Lys-Ile-Val-Gly-Ile-Gln-Met-Asn
 770 775 780
 Arg-Val-Ala-Leu-Arg-Leu-Leu-Glu-Arg-Lys-Ile-Ser-Leu-Thr-Trp-Asp
 785 790 795 800
 Asp-Ser-Leu-Val-Leu-Phe-Leu-Ser-Glu-Gln-Gly-Tyr-Asp-Ser-Ala-Phe
 805 810 815
 Gly-Ala-Arg-Pro-Leu-Lys-Arg-Leu-Ile-Gln-Gln-Lys-Val-Val-Thr-Met
 820 825 830
 Leu-Ser-Lys-Ala-Leu-Leu-Lys-Gly-Asp-Ile-Lys-Pro-Gly-Met-Ala-Val
 835 840 845
 Glu-Leu-Thr-Met-Ala-Lys-Asp-Val-Val-Val-Phe-Lys-Ile-Lys-Thr-Asn
 850 855 860
 Pro-Ala-Val
 865

<210> 110
 <211> 1170
 <212> DNA
 <213> Chlamydia pneumoniae

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 tgggaagggtg ctgcaggaga tccttgcgat ccttgcgcta cttgggtgca cgctattagc 180
 ttacgtgctg gattttacgg agactatggt ttcgaccgta tcttaaaagt agatgcacct 240
 aaaacatttt ctatgggagc caagcctact ggatccgctg ctgcaaaacta tactactgcc 300
 gtagatagac ctaaccgggc ctacaataag catttacacg atgcagagtg gttcactaat 360
 gcaggcttca ttgccttaaa catttgggat cgctttgatg ttttctgtac tttaggagct 420
 tctaattggtt acattagagg aaactctaca gcgttcaatc tcggttggtt attcggagtt 480
 aaaggtaacta ctgtaaatgc aaatgaacta ccaaagcttt ctttaagtaa cggagttggt 540
 gaactttaca cagacacctc tttctcttgg agcgtaggcg ctcgtggagc cttatgggaa 600
 tgcggttggtg caactttggg agctgaattc caatatgcac agtccaaacc taaagttgaa 660
 gaacttaatg tgatctgtaa cgtatcgcaa ttctctgtaa acaaaccctaa gggctataaa 720
 ggcgttgctt tccccttgcc aacagacgct ggcgtagcaa cagctactgg aacaaagtct 780
 ggcaccatca attatcatga atggcaagta ggagcctctc tatcttacag actaaactct 840
 ttagtgccat acattggagt acaatggtct cgagcaactt ttgatgctga taacatccgc 900
 attgctcagc caaaactacc tacagctggt ttaaacttaa ctgcatggaa cccttcttta 960
 ctaggaaatg ccacagcatt gtctactact gattcgttct cagacttcat gcaaattggt 1020
 tcctgtcaga tcaacaagtt taaatctaga aaagcttggt gagttactgt aggagctact 1080
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 gctcacgtat ctgggtcagtt cagattctaa 1170

<210> 111
 <211> 2601
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 111

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<210> 112
<211> 389
<212> PRT
<213> Chlamydia pneumoniae
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<400> 112															
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Ser	Val	Gly	Ser	Leu	Gln	Ala	Leu	Pro	Val	Gly	Asn	Pro	Ser	Asp	Pro
			20					25					30		
Ser	Leu	Leu	Ile	Asp	Gly	Thr	Ile	Trp	Glu	Gly	Ala	Ala	Gly	Asp	Pro

35 40 45
 Cys Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Leu Arg Ala Gly
 50 55 60
 Phe Tyr Gly Asp Tyr Val Phe Asp Arg Ile Leu Lys Val Asp Ala Pro
 65 70 75 80
 Lys Thr Phe Ser Met Gly Ala Lys Pro Thr Gly Ser Ala Ala Asn
 85 90 95
 Tyr Thr Thr Ala Val Asp Arg Pro Asn Pro Ala Tyr Asn Lys His Leu
 100 105 110
 His Asp Ala Glu Trp Phe Thr Asn Ala Gly Phe Ile Ala Leu Asn Ile
 115 120 125
 Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Ser Asn Gly Tyr
 130 135 140
 Ile Arg Gly Asn Ser Thr Ala Phe Asn Leu Val Gly Leu Phe Gly Val
 145 150 155 160
 Lys Gly Thr Thr Val Asn Ala Asn Glu Leu Pro Asn Val Ser Leu Ser
 165 170 175
 Asn Gly Val Val Glu Leu Tyr Thr Asp Thr Ser Phe Ser Trp Ser Val
 180 185 190
 Gly Ala Arg Gly Ala Leu Trp Glu Cys Gly Cys Ala Thr Leu Gly Ala
 195 200 205
 Glu Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu Leu Asn Val
 210 215 220
 Ile Cys Asn Val Ser Gln Phe Ser Val Asn Lys Pro Lys Gly Tyr Lys
 225 230 235 240
 Gly Val Ala Phe Pro Leu Pro Thr Asp Ala Gly Val Ala Thr Ala Thr
 245 250 255
 Gly Thr Lys Ser Ala Thr Ile Asn Tyr His Glu Trp Gln Val Gly Ala
 260 265 270
 Ser Leu Ser Tyr Arg Leu Asn Ser Leu Val Pro Tyr Ile Gly Val Gln
 275 280 285
 Trp Ser Arg Ala Thr Phe Asp Ala Asp Asn Ile Arg Ile Ala Gln Pro
 290 295 300
 Lys Leu Pro Thr Ala Val Leu Asn Leu Thr Ala Trp Asn Pro Ser Leu
 305 310 315 320
 Leu Gly Asn Ala Thr Ala Leu Ser Thr Thr Asp Ser Phe Ser Asp Phe
 325 330 335
 Met Gln Ile Val Ser Cys Gln Ile Asn Lys Phe Lys Ser Arg Lys Ala
 340 345 350
 Cys Gly Val Thr Val Gly Ala Thr Leu Val Asp Ala Asp Lys Trp Ser
 355 360 365
 Leu Thr Ala Glu Ala Arg Leu Ile Asn Glu Arg Ala Ala His Val Ser
 370 375 380
 Gly Gln Phe Arg Phe
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<210> 113
 <211> 866
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 113
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 Glu Leu Ala Lys Ser Ser Lys His Thr Tyr Val Thr Glu Asn His Leu
 20 25 30

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Leu Leu Ala Leu Leu Glu Asn Thr Glu Ser Leu Phe Tyr Leu Val Ile
 35 40 45
 Lys Asp Ile His Gly Asn Pro Gly Leu Leu Asn Thr Ala Val Lys Asp
 50 55 60
 Ala Leu Ser Arg Glu Pro Thr Val Val Glu Gly Glu Val Asp Pro Lys
 65 70 75 80
 Pro Ser Pro Gly Leu Gln Thr Leu Leu Arg Asp Ala Lys Gln Glu Ala
 85 90 95
 Lys Thr Leu Gly Asp Glu Tyr Ile Ser Gly Asp His Leu Leu Leu Ala
 100 105 110
 Phe Trp Ser Ser Asn Lys Glu Pro Phe Asn Ser Trp Lys Gln Thr Thr
 115 120 125
 Lys Val Ser Phe Lys Asp Leu Lys Asn Leu Ile Thr Lys Ile Arg Arg
 130 135 140
 Gly Asn Arg Met Asp Ser Pro Ser Ala Glu Ser Asn Phe Gln Gly Leu
 145 150 155 160
 Glu Lys Tyr Cys Lys Asn Leu Thr Ala Leu Ala Arg Glu Gly Lys Leu
 165 170 175
 Asp Pro Val Ile Gly Arg Asp Glu Glu Ile Arg Arg Thr Ile Gln Val
 180 185 190
 Leu Ser Arg Arg Thr Lys Asn Asn Pro Met Leu Ile Gly Glu Pro Gly
 195 200 205
 Val Gly Lys Thr Ala Ile Ala Glu Gly Leu Ala Leu Arg Leu Ile Gln
 210 215 220
 Gly Asp Val Pro Glu Ser Leu Lys Gly Lys Gln Leu Tyr Val Leu Asp
 225 230 235 240
 Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr Arg Gly Glu Phe Glu Glu
 245 250 255
 Arg Leu Lys Ser Val Leu Lys Asp Val Glu Ser Gly Asp Gly Glu His
 260 265 270
 Ile Ile Phe Ile Asp Glu Val His Thr Leu Val Gly Ala Gly Ala Thr
 275 280 285
 Asp Gly Ala Met Asp Ala Ala Asn Leu Leu Lys Pro Ala Leu Ala Arg
 290 295 300
 Gly Thr Leu His Cys Ile Gly Ala Thr Thr Leu Asn Glu Tyr Gln Lys
 305 310 315 320
 Tyr Ile Glu Lys Asp Ala Ala Leu Glu Arg Arg Phe Gln Pro Ile Phe
 325 330 335
 Val Thr Glu Pro Ser Leu Glu Asp Ala Val Phe Ile Leu Arg Gly Leu
 340 345 350
 Arg Glu Lys Tyr Glu Ile Phe His Gly Val Arg Ile Thr Glu Gly Ala
 355 360 365
 Leu Asn Ala Ala Val Leu Leu Ser Tyr Arg Tyr Ile Pro Asp Arg Phe
 370 375 380
 Leu Pro Asp Lys Ala Ile Asp Leu Ile Asp Glu Ala Ala Ser Leu Ile
 385 390 395 400
 Arg Met Gln Ile Gly Ser Leu Pro Leu Pro Ile Asp Glu Lys Glu Arg
 405 410 415
 Glu Leu Ala Ala Leu Ile Val Lys Gln Glu Ala Ile Lys Arg Glu Gln
 420 425 430
 Ser Pro Ser Tyr Gln Glu Glu Ala Asp Ala Met Gln Lys Ser Ile Asp
 435 440 445
 Ala Leu Arg Glu Glu Leu Ala Ser Leu Arg Leu Gly Trp Asp Glu Glu
 450 455 460
 Lys Lys Leu Ile Ser Gly Leu Lys Glu Lys Lys Asn Ser Leu Glu Ser
 465 470 475 480
 Met Lys Phe Ser Glu Glu Glu Ala Glu Arg Val Ala Asp Tyr Asn Arg

Val Ala Glu Leu Arg Tyr Ser Leu Ile Pro Gln Leu Glu Glu Glu Ile
 500 505 510
 Lys Gln Asp Glu Ala Ser Leu Asn Gln Arg Asp Asn Arg Leu Leu Gln
 515 520 525
 Glu Glu Val Asp Glu Arg Leu Ile Ala Gln Val Val Ala Asn Trp Thr
 530 535 540
 Gly Ile Pro Val Gln Lys Met Leu Glu Gly Glu Ala Glu Lys Leu Leu
 545 550 555 560
 Ile Leu Glu Glu Ser Leu Glu Glu Arg Val Val Gly Gln Pro Phe Ala
 565 570 575
 Val Ser Ala Val Ser Asp Ser Ile Arg Ala Ala Arg Val Gly Leu Asn
 580 585 590
 Asp Pro Gln Arg Pro Leu Gly Val Phe Leu Phe Leu Gly Pro Thr Gly
 595 600 605
 Val Gly Lys Thr Glu Leu Ala Lys Ala Leu Ala Asp Leu Leu Phe Asn
 610 615 620
 Lys Glu Glu Ala Met Val Arg Phe Asp Met Ser Glu Tyr Met Glu Lys
 625 630 635 640
 His Ser Ile Ser Lys Leu Ile Gly Ser Ser Pro Gly Tyr Val Gly Tyr
 645 650 655
 Glu Glu Gly Gly Ser Leu Ser Glu Ala Leu Arg Arg Arg Pro Tyr Ser
 660 665 670
 Val Val Leu Phe Asp Glu Ile Glu Lys Ala Asp Lys Glu Val Leu Asn
 675 680 685
 Ile Leu Leu Gln Val Phe Asp Asp Gly Ile Leu Thr Asp Gly Lys Lys
 690 695 700
 Arg Lys Val Asn Cys Lys Asn Ala Leu Phe Ile Met Thr Ser Asn Ile
 705 710 715 720
 Gly Ser Pro Glu Leu Ala Asp Tyr Cys Ser Lys Lys Gly Ser Glu Leu
 725 730 735
 Thr Lys Glu Ala Ile Leu Ser Val Val Ser Pro Val Leu Lys Arg Tyr
 740 745 750
 Leu Ser Pro Glu Phe Met Asn Arg Ile Asp Glu Ile Leu Pro Phe Val
 755 760 765
 Pro Leu Thr Lys Glu Asp Ile Val Lys Ile Val Gly Ile Gln Met Arg
 770 775 780
 Arg Ile Ala Gln Arg Leu Lys Ala Arg Arg Ile Asn Leu Ser Trp Asp
 785 790 795 800
 Asp Ser Val Ile Leu Phe Leu Ser Glu Gln Gly Tyr Asp Ser Ala Phe
 805 810 815
 Gly Ala Arg Pro Leu Lys Arg Leu Ile Gln Gln Lys Val Val Ile Leu
 820 825 830
 Leu Ser Lys Ala Leu Leu Lys Gly Asp Ile Lys Pro Asp Thr Ser Ile
 835 840 845
 Glu Leu Thr Met Ala Lys Glu Val Leu Val Phe Lys Lys Val Glu Thr
 850 855 860
 Pro Ser
 865

<210> 114
 <211> 1179
 <212> DNA
 <213> Homo sapiens

<400> 114

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caaggaagcc ctggaatcac ttcattattct cccgttgcta gcattcgaca agggaaacca 180
aagattaaat cttccggtaa tccataggga ttgtgggtccg aacacactcc ggaagaaaac 240
cattctcett cttttggctg atatatattgat cgagcagcct ctgctaaagc tcgtgctgca 300
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ggcaccataa tattctctaa ccaatcacga tccgctatcg tctctgcat aggaacggta 420
ttaatcagag cttgcgtaaa atcaggcact tgtttggcgg agtgatttcc ccaaaccaca 480
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gcacatcat ctagtccat gcgcacacca gataaagccc tttctgttcc aggaatatcg 900
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accataagcc accctctctt tacttttaca aaacgcacat actctcaaca ctacgtttgc 1080
aactaactaa ttttggtccc aacatacgtt tggatgataa aagaatcaag tacctagatt 1140
ccttagtaaa agcttttggc aaaaaaagc tcatctatt 1179

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<210> 115
 <211> 772
 <212> DNA
 <213> Homo sapiens

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<400> 115
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gtattgataa agctgttaag gttgttgttg atcaaatcag aaaaatcagc aaacctgttc 180
agcatcataa agaaattgct caagttgcaa caatttctgc taataatgat gcagaaatcg 240
ggaatctgat tgctgaagca atggagaaaag ttggtaaaaa cggctctatc actgttgaag 300
aagcaaaagg atttgaaacc gttttggatg ttgttgaaagg aatgaatttc aatagagggt 360
acctctctag ctacttcgca acaaatccag aaactcaaga atgtgtatta gaagacgctt 420
tggttcta at ctacgataag aaaatttctg ggatcaaaga tttccttctt gttttacaac 480
aagttgctga atccggccgt cctcttctta ttatagcaga agacattgaa ggcaagctt 540
tagctacttt ggtcgtgaac agaattcgtg gaggattccg ggtttgcgca gttaaagctc 600
caggcttttg agatagaaga aaagctatgt tggaaagcat cgctatctta actggcgggtc 660
aactcattag cgaagagttg ggcatgaaat tagaaaacgc taacttagct atgttaggta 720
aagctaaaaa agttatcgtt tctaagggaag acacgaccat cgtcgaagga at 772

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<210> 116
 <211> 487
 <212> DNA
 <213> Homo sapiens

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<400> 116
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agacgtcctt tggagtctcg atacttacia ggcgcggtta agcaggcagc tgctgcaaag 180
gaaaaaaagg ctcttgaaca ggaagtatcc aaacaagaag aagaagcttc taaactctgg 240
gaagagaaac agagttatgc tgcgtcgtgt gtgaatgcc tcaatttcag tgtaagaaag 300
caaatagaag agcaacagaa aaccatttcc aatccaggaa atgaccagac tcttctctgg 360
aagaaagatc cacatacatc cggagaacct gttatccaaa cggtacaaga ctgttctcag 420
gatcaagaag aagagaaaaa agttctagag cgattaaaca aacgttctct gacgtgtcag 480

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gatctta

487

<210> 117

<211> 1014

<212> DNA

<213> Homo sapiens

<400> 117

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atcttttctat taacagagga aaaataacct attgataaac agagcggtac aaggagatgc 180
aaataaagct gcttttaggat ccttacctag attctagaaa atgggttgcg gaatttgaac 240
aaacaaacta attaaaaatt aaaactgaaa aaaatagttt aaaacaacaa ctagaggata 300
ttttttcatg gcgctaaaag atacggcaaa aaaaatgact gacttggttg aaagtatcca 360
acaaaatttg cttaaagcag aaaaaggaaa taaagccgca gcacaaagag ttcgtacaga 420
atctatcaaa tttagaaaaga tcgcgaagggt atatcgtaaa gagtccatta aagcagaaaa 480
aatgggctta atgaaaaaaa gcaaagccgc tgctaaaaaa gctaaagctg ctgctaagaa 540
gcctgttcgc gctacaaaaa cagtggctaa aaaagcttgt acaaaaagaa cttgtgctac 600
taaagcaaag gtcaaaccac caaaaaaagc cgctcctaaa acaaaagtta aaacagcgaa 660
aaaaactcgc tcaacaaaaa aataatattt tagcgctttc tcttttttat agagggcact 720
tttatcaaca gggccctctt tcctcttctc attgatccct tctctttttt ttgttatcct 780
ttccgttctc gcaaaggcaa gtccttgcaa ataaaagtac aacctcacac ctcttttga 840
ggaaaaacct ttcactttct ttaggattca agttgctctc ctgctatcgt aactgtaaac 900
atcttgcgct ctgtggaggc tggtcatctc ctcaaaggga atatgcatcc tctttaaaaa 960
caaaagagct tgcgctccat aatttatttg cacctcttat cccatcccaa aata 1014

```

<210> 118

<211> 287

<212> DNA

<213> Homo sapiens

<400> 118

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atgcaaataa agctgcttta ggatccttac ctagattcta gaaaatgggtt gcatgaattt 60
gaacaaacaa actaattaaa aattaaaact gaaaaaaata gtttaaaaca acaactagag 120
gatatttttt catggcgcta aaagatacgg caaaaaaaat gactgacttg ttggaaagta 180
tccaacaaaa tttgcttaaa gcagaaaaag gaaataaagc cgcagcacia agagttcgt 240
cagaatctat caaattagaa aagatcgcgga aggtatatcg taaagag 287

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<210> 119

<211> 1002

<212> DNA

<213> Homo sapiens

<400> 119

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cctaattacg gaggccatac ggtatcttct cgaggaggat ttcaagggat atgcgtacga 180
atagccgatt tattccgtaa ctgtttctct cgtaatagag gcactactac tacgccatct 240
cgaactgtta tcaactcaggc agatatttat catccgacta tttctggaca aggagctcaa 300
cctattgtct ctacaggaga taagaaatta gatagcgcaa ttattcaagc agatttgcgt 360
gcgcagaata aacagacttt ggctacacat attcaaagta agctagggtc tatggaggga 420
caatctcctc aagattataa agctggtgcg tatagtgcgc taagattgat gctgtttact 480
ccaggcgaaa ctactgtgag tagcgagcgg gaacgtcaag cgtgcgttac gggtcgggat 540
ctctgggaac aggctgcagg agatcttgct accaatggga atacagatgg gcttatgtta 600
atggctaacc tatctgtggg aggggaagcat gtgcctgcgg ggcatttaag agaatacatg 660
gatactgtaa aggggtacgtt tactgatgag aacgaggcta cagatcctac ggtagatgcc 720

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atTTtagatt	tagcagcaaa	aatcgatgcg	acggaattct	ctagtccctgg	ttcagggcaa	780
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cttcttggtt	tagaagatca	aaatgggcaa	gatcctcaac	gtgttcaaga	taactcaaaa	900
gagttacaaa	aactgttaga	aaatgctcga	aaaacagatc	ctgagttata	tttccaaaca	960
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<210> 120
 <211> 1218
 <212> DNA
 <213> Homo sapiens

<400> 120	atgcatcacc	atcaccatca	cgtgagtagc	ataagcccta	taggggggaa	ttctgggcca	60
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	ggagagctag	aagagcgct	ttcggatcat	gcagagtcta	tcattaccga	gagctcgaa	180
	acgctgtttc	gtactacttc	ttcatcaggg	gtcagtgaag	atcttcagca	acacgttagc	240
	ttggaggaat	ctccacgaca	acgaggtttc	cttggacgga	tccgtgatgc	agtagcttct	300
	atTTggaagc	gtcgtgttgc	acgaagggaat	gaaaactatg	atgtgaaaaa	agcagaagag	360
	cagcaaggga	ttgtgcaata	tctgcaggat	tcgaaaatgc	ctgctttaac	gcgtgcctat	420
	cgccatctcc	gtgctttcaa	ttctgcatgc	ttacgtacga	ttcgtgagtt	tttcgctacc	480
	atTTttcgtg	ctttaaggga	tgcgatttat	cgacattgta	cacgttctgg	gatcaacttt	540
	tgtggagctg	ataaagactc	tttagaagtt	cttgttgctg	tgggtttgct	tttgcgatg	600
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	gatgctccgg	tgacaggtgc	ggggagaact	cttgttgatg	atgctgtaga	cgatattgaa	720
	tcgattttta	atacgagaac	caactggcct	caacatgtca	tgatagggtt	ttctcgtggt	780
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	gttcgttttag	aaaaagaaga	cccttcttca	gattattctc	aagctttatt	attagcaggg	900
	ataatagatc	gcttggcgga	gaaagcccct	atggctgcaa	agtatgtttt	ggatgcattg	960
	cgtgttcgaa	cttcggagct	cataggagaa	ctcattattc	tcgatttgct	tcctcctgta	1020
	tggaagggtt	gccgcggagg	cgtattccct	cctgtgaatg	agcagctcgt	tgtgcaaatt	1080
	gttaatgcaa	acgtagaacg	attgcatttc	actttcgctc	atgagccaca	agcttatttg	1140
	cgtatgatcg	aaggtttggt	aaccaatttc	tttttcttac	ctagcgagga	agatcettct	1200
	tcggttggga	atatctaa					1218

<210> 121
 <211> 726
 <212> DNA
 <213> Homo sapiens

<400> 121	catatgcac	accatcacca	tcacacaaag	catggaaaac	gcattcgtgg	tatccaagag	60
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	cctactgtgc	gtttcgatca	aacggttgat	gtgtctgtta	aattagggat	cgatccaaga	180
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	cgaatttttag	tttttgctgc	tggagataag	gctgcagagg	ctattgaagc	aggagcggac	300
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	gcggttgcca	ctcccgatat	gatgagagag	gtcggaaaagc	taggaaaagt	tttaggtcca	420
	agaaacctta	tgcttacgcc	taaagccgga	actgtaacaa	cagatgtggt	taaaactatt	480
	gcggaactgc	gaaaaggtaa	aattgaattt	aaagctgac	gagctggtgt	atgcaacgtc	540
	ggagttgcga	agctttcttt	cgatagtgcg	caaatcaaa	aaaatgttga	agcgttgtgt	600
	gcagccttag	ttaaagctaa	gccgcgaact	gctaaaggac	aatatttagt	taatttcact	660
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	gaattc						726

<400>	122															
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Gly	Asn	Gly	Tyr	Pro	Ser	Ile	Asn	Pro	Ser	Asn	Asp	Asn	Gln	Tyr	Gly	
			20					25					30			
Leu	Val	Gln	Ser	Thr	Ser	Gly	Pro	Asn	Tyr	Gly	Gly	His	Thr	Val	Ser	
		35					40					45				
Ser	Arg	Gly	Gly	Phe	Gln	Gly	Ile	Cys	Val	Arg	Ile	Ala	Asp	Leu	Phe	
	50					55					60					
Arg	Asn	Cys	Phe	Ser	Arg	Asn	Arg	Gly	Thr	Thr	Thr	Thr	Pro	Ser	Arg	
	65				70					75					80	
Thr	Val	Ile	Thr	Gln	Ala	Asp	Ile	Tyr	His	Pro	Thr	Ile	Ser	Gly	Gln	
				85					90					95		
Gly	Ala	Gln	Pro	Ile	Val	Ser	Thr	Gly	Asp	Lys	Lys	Leu	Asp	Ser	Ala	
			100					105					110			
Ile	Ile	Gln	Ala	Asp	Leu	Arg	Ala	Gln	Asn	Lys	Gln	Thr	Leu	Ala	Thr	
		115					120					125				
His	Ile	Gln	Ser	Lys	Leu	Gly	Ser	Met	Glu	Gly	Gln	Ser	Pro	Gln	Asp	
	130					135					140					
Tyr	Lys	Ala	Gly	Ala	Tyr	Ser	Ala	Leu	Arg	Leu	Met	Leu	Phe	Thr	Pro	
	145				150					155					160	
Gly	Glu	Thr	Thr	Val	Ser	Ser	Glu	Arg	Glu	Arg	Gln	Ala	Cys	Val	Thr	
				165					170					175		
Gly	Arg	Asp	Leu	Trp	Glu	Gln	Ala	Ala	Gly	Asp	Leu	Ala	Thr	Asn	Gly	
			180					185					190			
Asn	Thr	Asp	Gly	Leu	Met	Leu	Met	Ala	Asn	Leu	Ser	Val	Gly	Gly	Lys	
		195					200					205				
His	Val	Pro	Ala	Gly	His	Leu	Arg	Glu	Tyr	Met	Asp	Thr	Val	Lys	Gly	
	210					215					220					
Thr	Phe	Thr	Asp	Glu	Asn	Glu	Ala	Thr	Asp	Pro	Thr	Val	Asp	Ala	Ile	
	225				230					235					240	
Leu	Asp	Leu	Ala	Ala	Lys	Ile	Asp	Ala	Thr	Glu	Phe	Ser	Ser	Pro	Gly	
				245					250					255		
Ser	Gly	Gln	Val	Ile	Leu	Asn	Tyr	Ile	Gly	Asn	Tyr	Gly	Gln	Val	Val	
		260						265					270			
Leu	Glu	Asn	Glu	Glu	Met	Asn	Leu	Leu	Val	Leu	Glu	Asp	Gln	Asn	Gly	
		275					280					285				
Gln	Asp	Pro	Gln	Arg	Val	Gln	Asp	Asn	Ser	Lys	Glu	Leu	Gln	Lys	Leu	
	290					295					300					
Leu	Glu	Asn	Ala	Arg	Lys	Thr	Asp	Pro	Glu	Leu	Tyr	Phe	Gln	Thr	Leu	
	305				310					315					320	
Thr	Val	Ile	Thr	Ser	Ser	Val	Phe	Leu	Asp							
				325					330							

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<210> 123
<211> 405
<212> PRT
<213> Homo sapiens
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<400> 123
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 20 25 30
 Asp Asp Val Pro Asp Ser Glu Glu Gly Glu Leu Glu Glu Arg Val Ser
 35 40 45
 Asp His Ala Glu Ser Ile Ile Thr Glu Ser Ser Glu Thr Leu Phe Arg
 50 55 60
 Thr Thr Ser Ser Ser Gly Val Ser Glu Asp Leu Gln Gln His Val Ser
 65 70 75 80
 Leu Glu Glu Ser Pro Arg Gln Arg Gly Phe Leu Gly Arg Ile Arg Asp
 85 90 95
 Ala Val Ala Ser Ile Trp Lys Arg Arg Val Ala Arg Arg Asn Glu Asn
 100 105 110
 Tyr Asp Val Lys Lys Ala Glu Glu Gln Gln Gly Ile Val Gln Tyr Leu
 115 120 125
 Gln Asp Ser Lys Met Pro Ala Leu Thr Arg Ala Tyr Arg His Leu Arg
 130 135 140
 Ala Phe Asn Ser Ala Cys Leu Arg Thr Ile Arg Glu Phe Phe Ala Thr
 145 150 155 160
 Ile Phe Arg Ala Leu Arg Asp Ala Tyr Tyr Arg His Cys Thr Arg Ser
 165 170 175
 Gly Ile Asn Phe Cys Gly Ala Asp Lys Asp Ser Leu Glu Val Leu Val
 180 185 190
 Ala Val Gly Leu Leu Leu Arg Met Ala Thr Leu Arg Ser Phe Glu His
 195 200 205
 Val Gly Gly Asn Tyr Glu Asp Arg Leu Val Asn Asn Asp Ala Pro Val
 210 215 220
 Thr Gly Ala Gly Arg Thr Leu Val Asp Asp Ala Val Asp Asp Ile Glu
 225 230 235 240
 Ser Ile Leu Asn Thr Arg Thr Asn Trp Pro Gln His Val Met Ile Gly
 245 250 255
 Phe Ser Arg Gly Leu Val Gln Leu Cys Ala Thr Pro Tyr Asn Ala Thr
 260 265 270
 Ser Gln Glu Cys Phe Lys Ser Ile Val Arg Leu Glu Lys Glu Asp Pro
 275 280 285
 Ser Ser Asp Tyr Ser Gln Ala Leu Leu Leu Ala Gly Ile Ile Asp Arg
 290 295 300
 Leu Ala Glu Lys Ala Pro Met Ala Ala Lys Tyr Val Leu Asp Ala Leu
 305 310 315 320
 Arg Val Arg Thr Ser Glu Leu Ile Gly Glu Leu Ile Ile Leu Asp Leu
 325 330 335
 Leu Pro Pro Val Trp Lys Val Gly Arg Gly Gly Val Phe Pro Pro Val
 340 345 350
 Asn Glu Gln Leu Val Val Gln Ile Val Asn Ala Asn Val Glu Arg Leu
 355 360 365
 His Ser Thr Phe Ala His Glu Pro Gln Ala Tyr Leu Arg Met Ile Glu
 370 375 380
 Gly Leu Val Thr Asn Phe Phe Leu Pro Ser Glu Glu Asp Pro Ser
 385 390 395 400
 Ser Val Gly Asn Ile
 405

<210> 124
 <211> 238
 <212> PRT
 <213> Homo sapiens

<400> 124

Met His His His His His His Thr Lys His Gly Lys Arg Ile Arg Gly
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 Ile Gln Glu Thr Tyr Asp Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala
 20 25 30
 Ile Asp Ile Leu Lys Gln Cys Pro Thr Val Arg Phe Asp Gln Thr Val
 35 40 45
 Asp Val Ser Val Lys Leu Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln
 50 55 60
 Ile Arg Gly Ser Val Ser Leu Pro His Gly Thr Gly Lys Val Leu Arg
 65 70 75 80
 Ile Leu Val Phe Ala Ala Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala
 85 90 95
 Gly Ala Asp Phe Val Gly Ser Asp Asp Leu Val Glu Lys Ile Lys Gly
 100 105 110
 Gly Trp Val Asp Phe Asp Val Ala Val Ala Thr Pro Asp Met Met Arg
 115 120 125
 Glu Val Gly Lys Leu Gly Lys Val Leu Gly Pro Arg Asn Leu Met Pro
 130 135 140
 Thr Pro Lys Ala Gly Thr Val Thr Thr Asp Val Val Lys Thr Ile Ala
 145 150 155 160
 Glu Leu Arg Lys Gly Lys Ile Glu Phe Lys Ala Asp Arg Ala Gly Val
 165 170 175
 Cys Asn Val Gly Val Ala Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys
 180 185 190
 Glu Asn Val Glu Ala Leu Cys Ala Ala Leu Val Lys Ala Lys Pro Ala
 195 200 205
 Thr Ala Lys Gly Gln Tyr Leu Val Asn Phe Thr Ile Ser Ser Thr Met
 210 215 220
 Gly Pro Gly Val Thr Val Asp Thr Arg Glu Leu Ile Ala Leu
 225 230 235

<210> 125

<211> 713

<212> DNA

<213> Chlamydia trachomatis

<400> 125

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 ctttgtctat tggatcttcc gatgctggaa cctcctatat tttctcgggg aacagtgtct 120
 ccactgggaa atctcaaaca acagggcaaa tagcgggagg agcgatctac tcccctactg 180
 ttacattgaa ttgtcctgcg acattctcta acaatacagc ctctatagct acaccgaaga 240
 cttcttctga agatggatcc tcaggaaatt ctattaaaga taccattgga ggagccattg 300
 cagggacagc cattacccta tctggagtct ctcgattttc aggaataacg gctgatttag 360
 gagctgcaat aggaactcta gctaattgcaa atacacccag tgcaactagc ggatctcaaa 420
 atagcattac agaaaaaatt actttagaaa acggttcttt tatttttgaa agaaaccaag 480
 ctaataaacg tggagcgatt tactctccta gcgtttccat taaagggaat aatattacct 540
 tcaatcaaaa tacatccact catgatggaa gcgctatcta ctttacaata gatgctacga 600
 ttgagctcttt aggatctgtt ctttttacag gaaataacgt tacagctaca caagctagtt 660
 ctgcaacatc tggacaaaat acaaatactg ccaactatgg ggcagccatc ttt 713

<210> 126

<211> 780

<212> DNA

<213> Chlamydia trachomatis

<400> 126

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ccttctcctt actcaggagt tttaaaagaa aacgcaccgt ttttacgttt cctcacacaa 60
ttaactaaca agcataactca ttctggattt cattgcctcc taaaattcct agtcaaattcc 120
gaaagaagcc gacactcgag cgctcttctc ctaaaaatct tgttttttct ctgcttccga 180
gttataacgc ggctgtctca taaccacacac taacatgatg aaacctctac gtttcgggta 240
tttcttttgc acaatctatt ttactttggt acaggcagcg ttgctaaaag aaccgaattc 300
ttgtcccgac tgccagaata attggaaaga agtcacccac acggatcaac tccttgaaaa 360
catcattcat gctgatgatg cttgttatca ctctgggtat gtacaggctc tcattgatat 420
gcattttctta gatagctgct gccagggtcat cggttgaaaac caaactgctt acttattttc 480
tcttcttaca gatgatgtta cgcgcaacgc cattatcaac ctaattaaag accttcatt 540
cattcactcc gtagaaatct gccaaagcat ctatcaaacc tgtcatcatc aaggccctca 600
tggaagact tctcttccag aacaacgttc tttctgtaca aaggctctgt gaaaagaagc 660
tatttggtta ccacagaata ccattctatt ctgcctctt gtagcagata ctatccaagc 720
aactaatagt gcagggtatcc gttttaacga cgaagtcgta ggaaaacgtg ttggctctgc 780

```

<210> 127

<211> 433

<212> DNA

<213> Chlamydia trachomatis

<400> 127

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ctttaaagat tcgtcgtcct tttggtacta cgagagaagt tcgtgtgaaa tggcggttatg 60
ttcctgaagg tgtaggagat ttggctacca tagtccttc tatcagggtc ccacagttac 120
agaaatcgat gagaagcttt ttccctaaga aagatgatgc gtttcatcgg tctagttcgc 180
tattctactc tccaatgggt ccgcattttt gggcagagct tcgcaatcat tatgcaacga 240
gtggtttgaa aagcgggtac aatattggga gtaccgatgg gtttctcctt gtcattgggc 300
ctggttatatg ggagtcggag ggtcttttcc gogcttatat ttcttcggtg actgatgggg 360
atggttaagag ccataaagta ggattttctaa gaattcctac atatagttgg caggacatgg 420
aagattttga tcc 433

```

<210> 128

<211> 803

<212> DNA

<213> Chlamydia trachomatis

<400> 128

```

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aaaagagttt taaaatggga aattctgggt tttatttgta taacactgaa aactgcgtct 120
ttgctgataa tatcaaagtt gggcaaatga cagagccgct caaggaccag caaataatcc 180
ttgggacaac atcaacacct gtcgcagcca aaatgacagc ttctgatgga atatctttaa 240
cagtctccaa taattcatca accaatgctt ctattacaat tgggtttggat gcggaaaaag 300
cttaccagct tattctagaa aagttgggag atcaaattct tgatggaatt gctgatacta 360
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tggttgaaagc ttttaacaac tttccaatca ctaataaaat tcaatgcaac gggttattca 480
ctcccagtaa cattgaaact ttattaggag gaactgaaat aggaaaattc acagtccac 540
ccaaaagctc tgggagcatg ttcttagtct cagcagatat tattgcatca agaattggaag 600
gcgcggttgt tctagctttg gtacgagaag gtgattctaa gccctgcgag attagttatg 660
gatactcatc aggcatcctt aatttatgta gtctaagaac cagtattact aatacaggat 720
tgactccgac aacgtattca ttacgtgtag gcgggtttaga aagcgggtgtg gtatgggtta 780
atgccctttc taatctcgtg ccg 803

```

<210> 129

<211> 842

<212> DNA

<213> Chlamydia trachomatis

<400> 129

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 aaatattggc ttggataaag ctggtgttat ttgtgatgaa cgcggagtca tccctaccga 120
 tgccacaatg cgcacaaacg tacctaacat ttatgctatt ggagatatca caggaaaatg 180
 gcaacttgcc catgtagctt ctcatcaagg aatcattgca gcacggaata tagctggcca 240
 taaagaggaa atcgattact ctgccgtccc ttctgtgata tttaccttcc ctgaagtcgc 300
 ttcagtaggc ctctcccaa cagcagctca acaacaaaa atccccgtca aagtaacaaa 360
 attcccattt cgagctattg gaaaagcggc cgcaatgggc gaggcgatg gatttgcagc 420
 cattatcagc catgagacta ctacgcagat cctaggagct tatgtgattg gccctcatgc 480
 ctcatcactg atttccgaaa ttacctagc agttcgtaat gaactgactc ttccttgtat 540
 ttacgaaact atccacgcac atccaacctt agcagaagtt tgggctgaaa gtgcgttggt 600
 agctgctgat accccattac atatgcccc tgctaaaaaa tgaccgattc agaattctct 660
 actcctaaaa aatctatacc cgccagattc cctaagtggc tacgccagaa actcccttta 720
 gggcgggtat ttgctcaaac tgataatact atcaaaaata aagggtctcc tacagtctgt 780
 gaggaagcct cttgtccgaa tcgcacccat tgttggtcta gacatacagc tacctatcta 840
 gc 842

<210> 130

<211> 813

<212> DNA

<213> Chlamydia trachomatis

<400> 130

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 aaagaagctt tcacgtcagt taatgtgatt ccagccttac tactatcccc aacaaaagca 180
 atacctaaaa aagattctcc gtcacgagga gaatcaaggt tgctgctcgt aaaactacaa 240
 attaacctt gggaagagac ttgatcctgt tgggtccacac cttggaaaac tacgggattg 300
 gttactgaga acaaaagtact ttgctctacc ttaccgggaa gaggatccgc atctttctct 360
 tggaaagaac ttggatctcc tacaattaac ctatactgtc cttcagcctg actatcttta 420
 gaccaaacga atagatctcg aatttgggtc aacaataaaa ccgcttgagg gcctacatat 480
 accagctcat ttacagactg tctccagca tgaagatcta cgcaactagc taaccgcgta 540
 acagaggcaa ggatagctgc tactacagac aaagaaaact tagaacaggt gctttttata 600
 tctttctcgg aactcatttc aaacctgcga aatagcactt ttttgacaaa ctacgctacc 660
 gaaacaatcg gtccaacaac gcgttctgcc tatgatttca caaagacaaa acgaccata 720
 gacaagctcc agagacgaca ttagagcttt agaccgtgga atgtacaatg ctgactgctt 780
 tttgagaaag attttttata aagaacaggc cct 813

<210> 131

<211> 1947

<212> DNA

<213> Chlamydia trachomatis

<400> 131

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 gatagagatt ctactacccc atccatggca ttcaacctct catcagtaaa cactttatta 120
 gagttgttta tctgccatc atcgatgata tcttctgaag tctttaatac cttcttacat 180
 aagatccatc tctccggaga acagtgtcct tctatggata aaattcctac gcagatatc 240
 acgcatccca aaatagcagg aatacctaga tagatggcat ttacaaacga agctgccgaa 300
 actaggaata tcaaagcagt aatcactaaa agtagtccta tcaccactaa tcccacctta 360
 aatgcagtgg aagatagaag attcgatata cgctctttca gtgttaatgg tgcagaacta 420
 gtggaaatat cctgtgccga attggaagat ccagctcctt gaacaacggg tacagtgtc 480
 atattttaca ttcctttttt ggttgtgagc agggagtcta cacaacact tatttttttc 540

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<210> 132
<211> 1278
<212> DNA
<213> Chlamydia trachomatis
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$$\begin{array}{ll} \langle 210 \rangle & 133 \\ \langle 211 \rangle & 916 \end{array}$$

<212> DNA

<213> Chlamydia trachomatis

<400> 133

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ggccagttct tcaaaattat gccttcattt cageaggaga gacacttact ctgaaagatt 120
tttcgagttt gatgttctcg aaaaatgttt cttagcggaga aaagggaatg atctcaggga 180
aaaccgtgag tatttcgga gcaggcgaag tgattttttg ggataactct gtgggggtatt 240
ctcctttgtc tattgtgcca gcatcgactc caactcctcc agcaccagca ccagctcctg 300
ctgcttcaag ctctttatct ccaacagtta gtgatgctcg gaaaggggtct attttttctg 360
tagagactag tttggagatc tcaggcgtca aaaaaggggt catgttcgat aataatgccg 420
ggaatttttg aacagttttt cgaggtaata gtaataataa tgctggtagt gggggtagtg 480
ggtctgctac aacaccaagt tttacagtta aaaactgtaa agggaaagt tctttcacag 540
ataacgtagc ctctgttgga ggcgagtag tctacaaagg aactgtgctt ttcaaagaca 600
atgaaggagg catattcttc cgagggaaca cagcatacga tgatttaggg attcttgctg 660
ctactagtct ggatcagaat acggagacag gaggcggtag aggagttatt tgctctccag 720
atgattctgt aaagtttgaa ggcaataaag gttctattgt ttttgattac aactttgcaa 780
aaggcagagg cggaagcatt ctaacgaaaag aattctctct tgtagcagat gattcgggtg 840
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<210> 134

<211> 751

<212> DNA

<213> Chlamydia trachomatis

<220>

<221> misc_feature

<222> 741

<223> n = A, T, C or G

<400> 134

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<210> 135

<211> 410

<212> DNA

<213> Chlamydia trachomatis

<400> 135

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aaactgttaa gattgagaac ttctctggcc aaggaatatt ttctggaac aaagctatcg 180
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aaacattggt	taatctcgat	agcgggagct	ctagacgaac	tgtcaccttc	tccgggaata	300
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<210> 136

<211> 2719

<212> DNA

<213> Chlamydia trachomatis

<400> 136

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 <211> 2354
 <212> DNA
 <213> Chlamydia trachomatis

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<210> 138
 <211> 898
 <212> DNA
 <213> Chlamydia trachomatis

<400> 138
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<210> 139
<211> 660
<212> PRT
<213> Chlamydia trachomatis
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Asn	Ser	Glu	Thr	Lys	Glu	Ser	Thr	Lys	Ala	Ser	Glu	Ala	Ser	Pro	Ser
Ala	Ser	Ser	Ser	Val	Ser	Ser	Trp	Ser	Phe	Leu	Ser	Ser	Ala	Lys	Asn
Ala	Leu	Ile	Ser	Leu	Arg	Asp	Ala	Ile	Leu	Asn	Lys	Asn	Ser	Ser	Pro
Thr	Asp	Ser	Leu	Ser	Gln	Leu	Glu	Ala	Ser	Thr	Ser	Thr	Ser	Thr	Val
Thr	Arg	Val	Ala	Ala	Lys	Asp	Tyr	Asp	Glu	Ala	Lys	Ser	Asn	Phe	Asp
Thr	Ala	Lys	Ser	Gly	Leu	Glu	Asn	Ala	Lys	Thr	Leu	Ala	Glu	Tyr	Glu
Thr	Lys	Met	Ala	Asp	Leu	Met	Ala	Ala	Leu	Gln	Asp	Met	Glu	Arg	Leu
Ala	Asn	Ser	Asp	Pro	Ser	Asn	Asn	His	Thr	Glu	Glu	Val	Asn	Asn	Ile
Lys	Lys	Ala	Leu	Glu	Ala	Gln	Lys	Asp	Thr	Ile	Asp	Lys	Leu	Asn	Lys
Leu	Val	Thr	Leu	Gln	Asn	Gln	Asn	Lys	Ser	Leu	Thr	Glu	Val	Leu	Lys
Thr	Thr	Asp	Ser	Ala	Asp	Gln	Ile	Pro	Ala	Ile	Asn	Ser	Gln	Leu	Glu
Ile	Asn	Lys	Asn	Ser	Ala	Asp	Gln	Ile	Ile	Lys	Asp	Leu	Glu	Arg	Gln
Asn	Ile	Ser	Tyr	Glu	Ala	Val	Leu	Thr	Asn	Ala	Gly	Glu	Val	Ile	Lys
Ala	Ser	Ser	Glu	Ala	Gly	Ile	Lys	Leu	Gly	Gln	Ala	Leu	Gln	Ser	Ile
Val	Asp	Ala	Gly	Asp	Gln	Ser	Gln	Ala	Ala	Val	Leu	Gln	Ala	Gln	Gln
Asn	Asn	Ser	Pro	Asp	Asn	Ile	Ala	Ala	Thr	Lys	Glu	Leu	Ile	Asp	Ala

Ala Glu Thr Lys Val Asn Glu Leu Lys Gln Glu His Thr Gly Leu Thr
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 Asp Ser Pro Leu Val Lys Lys Ala Glu Glu Gln Ile Ser Gln Ala Gln
 305 310 315 320
~~Lys Asp Ile Gln Glu Ile Lys Pro Ser Gly Ser Asp Ile Pro Ile Val~~
~~325 330 335~~
 Gly Pro Ser Gly Ser Ala Ala Ser Ala Gly Ser Ala Ala Gly Ala Leu
 340 345 350
 Lys Ser Ser Asn Asn Ser Gly Arg Ile Ser Leu Leu Leu Asp Asp Val
 355 360 365
 Asp Asn Glu Met Ala Ala Ile Ala Leu Gln Gly Phe Arg Ser Met Ile
 370 375 380
 Glu Gln Phe Asn Val Asn Asn Pro Ala Thr Ala Lys Glu Leu Gln Ala
 385 390 395 400
 Met Glu Ala Gln Leu Thr Ala Met Ser Asp Gln Leu Val Gly Ala Asp
 405 410 415
 Gly Glu Leu Pro Ala Glu Ile Gln Ala Ile Lys Asp Ala Leu Ala Gln
 420 425 430
 Ala Leu Lys Gln Pro Ser Ala Asp Gly Leu Ala Thr Ala Met Gly Gln
 435 440 445
 Val Ala Phe Ala Ala Ala Lys Val Gly Gly Gly Ser Ala Gly Thr Ala
 450 455 460
 Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr Lys Thr Ala Phe Ser
 465 470 475 480
 Ser Thr Ser Ser Ser Tyr Ala Ala Ala Leu Ser Asp Gly Tyr Ser
 485 490 495
 Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu Ser Arg Ser Gly Val
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 Gln Ser Ala Ile Ser Gln Thr Ala Asn Pro Ala Leu Ser Arg Ser Val
 515 520 525
 Ser Arg Ser Gly Ile Glu Ser Gln Gly Arg Ser Ala Asp Ala Ser Gln
 530 535 540
 Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln Thr Leu Gly Asp Val
 545 550 555 560
 Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met Ser Thr Ile Val Ser
 565 570 575
 Asn Pro Gln Ala Asn Gln Glu Glu Ile Met Gln Lys Leu Thr Ala Ser
 580 585 590
 Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala Val Gln Asn Ser Ala
 595 600 605
 Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu Arg Glu Phe Val Asp
 610 615 620
 Gly Glu Arg Ser Leu Ala Glu Ser Gln Glu Asn Ala Phe Arg Lys Gln
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 Gly Tyr Leu Ser
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<210> 140

<211> 598

<212> PRT

<213> Chlamydia trachomatis

<400> 140

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Ser	Gln	Asn	Thr	Lys	Gly	Asn	Asn	Lys	Val	Glu	Asp	Arg	Val	Cys	Ser
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Leu	Tyr	Ser	Ser	Arg	Ser	Asn	Glu	Asn	Arg	Glu	Ser	Pro	Tyr	Ala	Val
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Val	Asp	Val	Ser	Ser	Met	Ile	Glu	Ser	Thr	Pro	Thr	Ser	Gly	Glu	Thr
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Thr	Arg	Ala	Ser	Arg	Gly	Val	Leu	Ser	Arg	Phe	Gln	Arg	Gly	Leu	Val
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Arg	Ile	Ala	Asp	Lys	Val	Arg	Arg	Ala	Val	Gln	Cys	Ala	Trp	Ser	Ser
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Val	Ser	Thr	Ser	Arg	Ser	Ser	Ala	Thr	Arg	Ala	Ala	Glu	Ser	Gly	Ser
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Ser	Ser	Arg	Thr	Ala	Arg	Gly	Ala	Ser	Ser	Gly	Tyr	Arg	Glu	Tyr	Ser
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Pro	Ser	Ala	Ala	Arg	Gly	Leu	Arg	Leu	Met	Phe	Thr	Asp	Phe	Trp	Arg
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Ala	Asp	His	Leu	Glu	Ala	Lys	Glu	Leu	Ala	Gly	Pro	Asp	Gly	Val	Ala
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Ser	Arg	Glu	Ile	Gln	Thr	Gly	Leu	Arg	Ala	Arg	Ala	Thr	Leu	Glu	Glu
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Ser	Met	Pro	Met	Leu	Glu	Asn	Leu	Glu	Glu	Arg	Phe	Arg	Arg	Leu	Gln
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Phe	Ser	Cys	Cys	Lys	Gly	Ser	Thr	His	Arg	Tyr	Ala	Pro	Arg	Asp	Asp
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Asp	Asp	Met	Gly	Ile	Glu	Arg	Gly	Ala	Asp	Gly	Thr	Tyr	Asp	Ile	Pro
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Leu	Val	Asp	Asp	Trp	Arg	Arg	Gly	Val	Pro	Ser	Ile	Glu	Gly	Glu	Gly
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 Met Asp Leu Glu Thr Arg Arg Ser Phe Ala Val Gln Gln Gly His Tyr
 485 490 495
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 515 520 525
 Gln-Leu-Gln-Asn-Met-Asp-Val-Glu-Ala-Gly-Phe-Arg-Glu-Ala-Val-Tyr
 530 535 540
 Ala-Ser-Phe-Val-Ala-Gly-Met-Tyr-Asn-Tyr-Val-Val-Thr-Gln-Pro-Gln
 545 550 555 560
 Glu-Arg-Ile-Pro-Asn-Ser-Gln-Gln-Val-Glu-Gly-Ile-Leu-Arg-Asp-Met
 565 570 575
 Leu-Thr-Asn-Gly-Ser-Gln-Thr-Phe-Arg-Asp-Leu-Met-Lys-Arg-Trp-Asn
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 Arg-Glu-Val-Asp-Arg-Glu
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 <211> 788
 <212> DNA
 <213> Chlamydia trachomatis

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<210> 142
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 <213> Chlamydia trachomatis

<400> 142
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 aagtaagaag tataaaatag attatagata ctatttttat ttttctttca caccttcaga 540

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aaaaagcttg tgtaggattt gcttcgcatg aaagagtttt tagcgtacat tgtaaaaaat 600
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tacgaattga ctgttgctaa gggagatatc ggtaaaatta tcggtaaaga aggacgcact 720
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<210> 143

<211> 1754

<212> DNA

<213> Chlamydia trachomatis

<400> 143

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<210> 144

<211> 3037

<212> DNA

<213> Chlamydia trachomatis

<400> 144

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cagaaggaaa atcttgagat ttggctacct gccctttttt tctagcatcc cgaagacgct 180
tggggggtcgc cttttctgtt ttttcgcca tagatggcca gttgcttaag cgctataagg 240
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<210> 145

<211> 1353

<212> DNA

<213> Chlamydia trachomatis

<400> 145

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 caacatcgag cgcataagca taaaagtaat agcgatgctt cgcactctgga gggcaaggag 240
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 ctgcaagatt agagactgca ggcgaaaagg tatacactat ccagtgtatc cacaacccat 360
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<210> 146
<211> 1627
<212> DNA
<213> Chlamydia trachomatis
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<210> 147
<211> 1262
<212> DNA
<213> Chlamydia trachomatis
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<400> 147

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<210> 148

<211> 1596

<212> DNA

<213> Chlamydia trachomatis

<400> 148

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<210> 149
 <211> 2624
 <212> DNA
 <213> Chlamydia trachomatis

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<210> 150
 <211> 2052
 <212> DNA
 <213> Chlamydia trachomatis

<400> 150

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atggcggacg cggtttctgt aatagatgct accaaaaata ttctgctagt ggagtaagtc 1980
ttacatctat atccattgga gggggagact ctgtggatgg cccgcttctc tcggtagtaa 2040
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<210> 151

<211> 732

<212> DNA

<213> Chlamydia trachomatis

<400> 151

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agatatcggg aaaattatcg gtaaagaagg acgcactatt aaggctatcc gtactttatt 180
ggtttccgta gcaagtcgag ataatgtgaa agtcagccta gaaattatgg aagagcggta 240
aacgtatacg tttacagctt tttgagtcac tggttagagaa agtcttagcg cgcgtatttt 300
ctaacaccgt ttttcttctc gagaagactg tagtcttttt ggcccagag ttttaaggatc 360
tcaagggccg agtcacgttt tagaagttct cttcttgatc gagcgcagcg agttcttttg 420
ctttcttatg agcggagact ctctcggtag gtaggtcatc aaattttgca atttttgtct 480
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ccttctcata ggaattttta tcaaaacaga ggattttttt gatagttaga gctgctagtt 660
gagcggttgc ttgcttatca ggagccggga gcgtgtcaag aaatggagtc agagcttcca 720
aaacagcgtt gt 732

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<400>	152					
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ccaatcaaag	aaaatggaga	gttcaaaggc	cccatacaaa	aaggcacaat	gtagagtgtg	240
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gcttctgaac	catcgcataa	ccttacgtcg	tcaggtgaca	ccaaagcaat	tacttcttct	540
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ccataggctc	ttcaatcaga	attgcttcc	gtgctcccgc	atgcaaagca	gagtcttcaa	1260
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<210> 153
<211> 3141
<212> DNA
<213> Chlamydia trachomatis
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<400>	153						
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<210> 154
<211> 2275
<212> DNA
<213> Chlamydia trachomatis
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<400>	154						
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tcatatttcg	atgcgcggtg	ggagggatag	tatagctctc	cttcgcgagc	atcgagctgc	180	
ttacaccct	taaggtaata	gtacatcagg	gctggagtat	acatgtttga	aaaaagaagc	240	
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<210> 155
<211> 1909
<212> DNA
<213> Chlamydia trachomatis
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<400>	155						
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atācgtttaa	caacgaatcc	cgcagcacct	tgacaagaag	gtttcttctt	caaaaattct	240	
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 agaattaact gtctcgtccc gggagttact ggcttaaact ttttaaacat gttattcttc 1860
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<210> 156

<211> 1157

<212> DNA

<213> Chlamydia trachomatis

<400> 156

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 tttatgccga taattccata agtagtctct gcagacgctg tagcataatc aatctctgct 180
 ctgagcgtat gaagaggcac acgacggctt ttataccatt ccgacggagc aatctcagct 240
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<210> 157

<211> 3957

<212> DNA

<213> Chlamydia trachomatis

<400> 157

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